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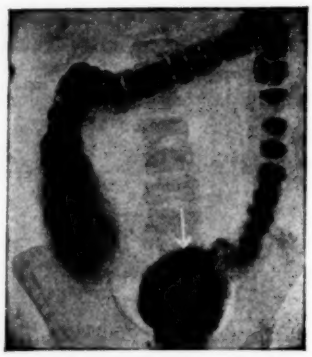

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A PROMINENT gastro-enterologist has said, "How often our elaborate and costly gastro-intestinal studies aimed at hunting down the cause of a chronic intestinal stasis leaves us with negative results until at the lower end of the alimentary tract the physician's finger elicits the *'a priori'* cause of the patient's trouble." Rectal constipation is very common. Its relief is simple when once it is discovered. Sphincteric stretching or cutting, under a general anæsthetic, is the major therapeutic procedure. But lubrication, by softening the feces and preventing rectal impactions, permits of easy evacuation without mechanical injury to the delicate rectal mucous membrane and without obstructing the arterio-venous circulation in the rectum. Most rectal pathology is probably the result of rectal stasis, and rectal stasis has potentiality for harm both intra-intestinally and extra-intestinally. Chronic irritation of the rectum can only be relieved by lubrication therapy.

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Preventive Pediatrics Plus Practical Psychology*

LEGRAND KERR, M.D., F.A.C.P.

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Brooklyn, N. Y.

We deem it wise to make a clean-cut connotation of our subject in order that the content in the mind of the reader and that in the mind of the audience will be the same.

Pediatrics in this paper is as defined in Stedmans Dictionary:—"The branch of medical science which treats of children in their hygienic and pathological relations."

Preventive pediatrics, therefore, would involve the maintainance of correct hygienic conditions, the prevention of pathological states, or their limitation if they have occurred.

We are prone to think of preventive pediatrics as what is popularly termed child hygiene and give to it an important place in preventive medicine. A place it has, but because its field and its results are both limited it is one far less important than popularly assigned.

Of necessity it divides the whole of childhood into distinct periods, though in theory the intent is not to do so. But for practical working purposes the divisions are made, and the child in each period is supervised by a constantly changing group of advisors. Each group, as a rule, is unaware of the nature of the previous supervision. More inimicable to better results is the fact that in each period division there is a continued shifting of supervisory care, so that the child becomes a case and loses its individuality in a recorded form.

A normal or a nearly normal child is able to attend school or clinic and its parents can have pointed out to them the findings of a physical examination and possibly certain defects with a recommendation for their correction. This is about as far as this method can go. It cannot give any recognition to the problems which are involved when the child is ill or give any suitable supervision or advice to that most important period in any child's career, when there is the borderline period between illness and a return to health, or to the period immediately preceding illness.

Thus we have a situation created that calls for an intimate association of some individual who knows the habits, the past history, peculiarities and all of the surroundings of the child to be studied. That individual logically would be the family physician. In the large majority of instances he is unavailable. It is his custom to complacently await until professionally summoned. In the meantime the organized agency forces its overtures and inadequately does what he might have done efficiently.

That the reader does not believe in the organized agencies of child hygiene would be a wrong inference. Such agencies have a distinct place in child welfare, but they have not the importance given them by over enthusiastic organizers and supporters, valuable as they may be. Such agencies are truly limited in their scope. It is only possible for them to apply or utilize a part of the knowledge of present-day preventive pediatrics and that partial utilization is to groups of children rather than to the individual.

Let us give heed to the good these agencies may accomplish; let us give credit to their large numbers of faithful workers; let us do grateful honor to those who support them by their means—but let us not be blind to their limitations.

* Read before the Medical Association of the Greater City of New York at N. Y. Academy of Medicine, May 21st, 1928.

Just as the development of laboratory methods has been of capital importance to the progress of medicine, and its over emphasis and misapplication, in many instances, has been crippling to the diagnostic acumen of the individual—so is the present craze for standardization sapping the initiative of individual thought and purpose, and the expansion of health agencies and conferences, as they are now commonly carried beyond their real purposes and powers destructive to the ambition of individual effort in preventive pediatrics.

Who is most capable and in the strongest position to carry on this most important work? Certainly not the pediatrician, because while he may do a herculean amount of the work among a limited number of people, he cannot reach the great mass at the critical time of their need.

Group control, whether it be administered by the State or by an independent organization, in some instances far excels individual control. Individual control never could have lessened morbidity and mortality of the infections and contagions to their present per capita. This achievement is directly traceable to organized control and the application of generalized community sanitation and hygiene.

However, the commonly accepted method of dealing with preventive pediatrics in the mass is not effective.

It is the distinct work of the family physician. Unfortunately, many physicians consider it almost unethical to show professional interest in a patient until there is a definite pathological process present. With the best of intentions and ideals, they, alas, repel confidence. By their apparent contempt for what seems trivial complaints they give parents the cue not to bother any doctor until there is some definite symptomatology. We cannot practice preventive pediatrics in that fashion. Now let us subsidize a little practical psychology. It is both truism and good psychology, that what is paid for is valued more highly by the average individual than a gratuity. While many mothers use these various agencies, it is my experience they assume the attitude that advice is worth only what they pay for in time or money. Commonly they tell me they have their babies weighed weekly and receive advice as to feeding and sundry other matters, and yet they boast that all they heed is the weight. Everything else goes into the discard. Happily their contact with the agencies has some good effect because they usually ask my advice concerning what was suggested to them. The physician therefore, must start out with the determination that his advice will be paid for; that preventive pediatrics must be remunerative as any other branch of pediatrics.

The general practitioner to prevent his own elimination must soon take the lead in preventive medicine. He must force himself into the position of medical advisor not merely when disease is present but before its occurrence.

By his neglect of this legitimate feature of his duty —one of very recent years—he complacently allows the rapid growth of corporations and organizations, which commonly obtrude their attentions upon his patients; always to their gain; often to his loss.

Doctors are not ordinarily interested in the rapid development of apartment houses and family hotels, which are at present a marked feature of urban life. They should be. It should appeal to them not only as a trend in real estate development noted perhaps, commented upon and dismissed, but also as no small factor in their professional career. Every family that moves into these buildings may represent the giving up of a home; or at least a contraction of that home to 2, 3 or 4 rooms. Such contraction is incompatible with lengthy or severe illness and so the hospital steps in to offer its services. No matter what the housing conditions, there will always be a field for preventive medicine, and the person in the small apartment or hotel needs advice in the maintainence of a healthy body. Why not meet this situation as it exists today and be prepared to cope with its inevitable changes?

"How is the general practitioner to know what to teach when his contact with pediatricians gives him so many varying opinions?" Difference of opinion among pediatricians is not fanciful; it is real and reasonable. Individual men are able to so thoroughly equip themselves in the use of certain definite measures and methods that they become very proficient in them. It becomes their line of least resistance. It does not at all hold that because a man becomes proficient in a method of precedure that a divergent method is all wrong. Its proponent may be just as proficient in his method. We should be tolerant of one another and patient with the general practitioner, who seeing our varying and apparently antagonostic methods, yet not understanding the reason, thinks we cannot all be right, and decides we all are wrong.

The best method I know is to start your contact with the family as one who is able to advise in time of health as well as in time of illness. Make a complete physical examination of the infant or child, place your findings before the parents, give the immediate advice that may be needed and state that you will make a reexamination at a stated time; explain why. Parents rarely object to this, in fact, they welcome it and the contact which should exist between family and physician is naturally made to the mutual benefit of both.

It is impractical, yes, impossible to change this chaotic situation in a brief time. But unless, a start is made somewhere, progress will not begin. May I remind men in general practice that the greatest field of preventive medicine to-day is among children. I would go further and say that it is the one field white unto the harvest. Women's journals, clubs, organizations and lecturers have for the past few years covered this field and the average mother of to-day is ready to accept the advice of anyone whom she feels really competent to assist in her child's proper and normal development and in the prevention of disease.

In a paper of this kind, we cannot more than generalize and in doing so, I would make these suggestions.

(1) The vast majority of the disabling diseases of childhood are in early childhood, those of the digestive tract and in later years, respiratory. Naturally then, these would be the point of our immediate contact.

(2) Equip yourself to give safe, sane and practical advice in the prevention of such diseases as commonly affect these systems and gradually, as time for study allowed, add more specifically to your knowledge and more in detail.

This task is not difficult. Given a fair chance any physician could soon form a fairly accurate estimate of any child's physical and mental assets.

Under such a scheme the practice of medicine would be more remunerative because it is rapidly becoming the habit with the more intelligent parents to regard the pediatrician as a director of mental and physical hygiene for their children. They figure that it is economy in the long run to avoid illness by the substitution of a general professional supervision. Such a situation is a decided advantage to the physician because he can profitably devote more and more time to the field of preventive medicine. As he does so, he is less and less called upon to fight through those periods of storm and stress of acute illness, where often he is not accounted blameless if the patient dies, and is not accorded due

credit if the patient lives. It is just these trying periods that exhaust the average physician and make him prematurely old. Well, here is most of this work of preventive medicine going to the pediatrician and being handled by him and all because the general practitioner who first comes into intimate contact with the family will not or does not realize the possibilities of preventive pediatrics.

The average baby born of normal parents has excellent physical prospects. At the age of two or three years this will be changed unless the parents are reasonably common-sensed and have been adequately guided and advised.

The real gist of the problems relating to digestion is in the formation of proper habits in infancy. I am speaking now of the prevention of digestive disturbances. Parents rarely recognize this: physicians sometimes do. We all insist upon regularity as regards feeding in very early infancy but do we do this with a clear appreciation that what we are really doing is forming habit which in later childhood will be most valuable in preventive pediatrics. If we recognize the importance and the practical psychology in this would we not be more insistent that regularity be the keynote in later childhood; in other words, would we not follow it up?

In a rather large experience, it is my opinion that disease of the digestive system in later childhood can be directly traced to the lack of knowledge of the parents in the problems of feeding and habit forming in earlier childhood.

When the child has reached seven or eight years of age, if the rudiments of a sound hygienic education have been instilled into the parents and they have carried out the suggestions for the child, there should have been laid the foundation which will materially and favorably affect that child's health through its whole life.

Very early in life the psychological element enters. Those who attain success in the community are those who have learned to exercise self-discipline. This same element aids in the building up of a good physique.

When we make the one who has the care of the child think, then we will have accomplished the most effective health work, whether it involves the prevention of disease, the limitation of its results or its cure. The average person often imagines that he needs or wants instruction in regard to matters of health and hygiene. For practical purposes is this so? The average layman has been brought up to think of two states of his body—ease and dis-ease. How can we expect his immediate co-operation when we attempt to emphasize the question of a child's health and normal development and stressing that, leave disease as a secondary consideration? He has always given disease the prominent place; to stress normally you must change his viewpoint; his habit of thought. This is not easy. More and more have his thoughts centre upon his child's physical and mental development under normal conditions. Only in this way can he come to a proper appreciation of how big preventive measures should bulk in child care.

Recalling that advice obtained free is barely appreciated, you much charge for all advice given as regards matters of health. A procedure, at first a bit radical, but it is both good psychology and good business.

For several years, I have made a point of contact with my patients which has been educationally fruitful to them. In nearly every instance it has started them thinking and discussing among themselves certain definite problems, and has led to their asking further questions. When you get the parents of your patients to ask advice you have an educational hold upon them. Pedagogically it is always better to have them seek advice rather than have it forced upon them. This is the reason for what I choose to call my "Captions." They are trite sayings, printed upon the slips which are used for typewritten directions and so placed that they cannot escape notice. For convenience sake these are arbitrarily numbered and noted on the history card, so that the parents never get the same caption upon subsequent visits. Allow me to give you a few specimens of those most in use.

"A normal, healthy childhood is the best life insurance any adult can acquire."

"No two babies are alike; then why not treat them as individuals?"

"Teething may cause distress; but never disease."

" 'They say' harms more children than it helps."

"What helps your neighbor's child may harm yours."

"The malnourished child often becomes the pessimistic adult."

And this is how it works. Upon a subsequent visit Mr. A. or Mrs. B. says: "We were discusing what was printed on your direction slip and I would like to ask you, etc., and etc." And from that point, the conversation is carried on by me, and my visitor gets all of the education and preventive pediatrics that I think they will assimilate at that visit. And then, on the new directions, another little caption carries its message.

Well, gentlemen, I see great possibilities for some really progressive pediatric society or section. It would not be amiss to have a most competent committee appointed to study and consider what may be certain fundamentals of preventive pediatrics. Such a committee could then bring its findings and recommendations to the whole society and have the members devote a whole evening to a discussion of these fundamentals and let a two-thirds vote decide. If these coincide with the best pediatric thought of the day, have them suitably printed and placed in the hands of every possible practitioner. He will have, not alone the opinion of one authority, but also the best thought of the largest number of pediatricians in his locality, the verities that he could safely use in his important position as the earliest and most sought for advisor to the greatest mass of parents. An evening so employed would be more helpful to pediatrics, to the general practitioner and to the little ones for whom we assume a responsibility than many evenings spent in discussing a "report of a case" or a textbook rehash.

460 Clinton Avenue.

Surgical Emphysema

Cases of surgical emphysema occurring during labour are of sufficient rarity to warrant description of the following case which occurred in the obstetrical unit of the Royal Free Hospital.

A primigravida, aged 18, had a normal antenatal period except for slight bronchitis. She went into labour at full term and had a long first stage (55 hours). The second stage was also long (six hours). There was no maternal or fœtal distress and no interference was indicated. Two and a half hours before the child was born swelling appeared in the face extending from the cheeks to the neck. It was not tender and the patient only complained of slight discomfort. Later in the day after delivery the swelling was found to extend all over the face and chest. Typical crackling was present. There were a few scattered rhonchi in the chest. The swelling lasted for ten days. No special treatment was needed for the emphysema.

The puerperium was complicated by a *Bacillus coli* urinary infection. The patient made an uneventful recovery.

Dr. L. S. T. Burrell, who kindly examined the patient, found no lesion in the chest suggestive of tuberculosis and an X ray was normal. It is probable that during expulsive efforts a vesicle was ruptured into the mediastinum which caused the escape of air into the connective tissue planes of the neck. I have found five references in recent English and American literature to a similar condition. In all these cases the emphysema caused no serious symptoms in itself and disappeared in about a fortnight.—M. Salmond, M. D., *Lancet*, April 14, 1928.

Problems Confronting the Medical Profession

WILLIAM LATHROP LOVE, M.D.,*

Brooklyn, New York

Invited by the editor of the MEDICAL TIMES to write a series of articles on the Problems Confronting the Medical Profession, my memory hearkens back to 1896, when as medical fledglings he was the ambulance surgeon on the staff of the Brooklyn City Hospital and I rode on the bus of the Cumberland Street Hospital.

Neither of us feels particulary antique, but the *x*-ray had just been discovered. Radium was unknown. Henry Ford was a bicycle mechanic and there were no flivvers. The day of the "horseless carriage" had not dawned. The radio was unthought of. The girls wore clothes in those days—not even "flappers" drank whisky or "hootch" and a young fellow would no more have a pocket flask than he would advocate companionate marriage. It simply wasn't done—I mean drinking among the "younger set." Antiseptic surgery was just beginning to come into its own. Appendectomies were just beginning to be popular, but Cesarian sections were a rarity. I distinctly remember my first and only one. I never had the temerity myself to try it again because of the sadness of the sequel. Only the father survived.

The years have passed—more rapidly in medicine than in any other profession. I say this unhesitatingly and without fear of contradiction.

The same chaotic conditions confront the law *now* that confronted medicine thirty years ago. Too many a hard-working and self-sacrificing father envisions a life of luxury and financial ease for his offspring once he succeeds in passing his bar examinations. The legal profession is relatively as over-crowded as the medical profession was a quarter of a century ago. Too many young fellows are studying law not because they have any special liking for it, but simply because they see an easy road to wealth—or think they do, just as twenty years ago, when all the doctors were overworked in the grip epidemics, all the ambitious mothers and fathers put their boys in the medical colleges visualizing for them a prosperity and affluence they had never dreamed of for themselves. What happened? The medical profession became overstocked—overcrowded by young men who were simply actuated by desire for money—who had no idea of ideals or ethics. When the "grip" epidemics and typhoid scares and diphtheria devastations were overcome or wiped out by modern methods of medicine and sanitation, preventive medicine was born. There wasn't enough "business" to go around and the surplus of doctors who had no desire except to make money drifted into the abortion business and illegitimate practice and put a stain upon the profession of the healing art—the greatest profession of satisfaction and service of any calling in the world—a lasting stain, from which the medical profession is, even now, hardly emerging.

So now—one does not need to be a diagnostician to foretell the future of the law. I know many very fine lawyers—men with high ideals of ethics—men with the finest civic ideals and aspirations—men fitted by all the standards of Americanism to function on the Supreme Bench of our city and state. I have met a great many of that type in my service in the Legislature. But alas! there are many men who have gone into the legal profession in the last few years actuated by no other motive than to get money and to get it by any means, fair or foul. The *Brooklyn Daily Eagle* is to be warmly commended on the campaign it began, unaided and alone, against the "ambulance chasing lawyer." It has been so persistent and so courageous that public opinion has been awakened and now the *Eagle* has a great deal of company.

The developments of fraud are so widespread that legislation will be enacted that will wipe out these shyster lawyers just as we wiped out the so-called chiropractors who took a course of six months by mail and thereafter had the affrontery to hang out their shingles as "Doctors," qualified to treat the sick and the credulous.

This is bound to come. *It is on the cards.* And not alone that, but others of their ilk—doctors—renegade members of our profession, the abortionists and others of the get-rich-quick fraternity are caught in the net and gasping for freedom along with various officials of the insurance companies, adjusters, fake claimants with fraudulent negligence claims and malingerers and fakers, the flotsom and jetsam of the human family who drift with the tide and seek to live by their wits.

In asking me to write a series of articles, my old time friend, the editor of this medical journal, has assured me that the "columns of the publication are open to me." I am pretty busy in my varying vocations—the practice of medicine, politics, radio speaking, addressing various banquets, meetings, civic functions, men's clubs. I frequently have eight or ten invitations daily for this sort of thing. But this invitation appeals to me.

I am the only physician in the State Senate, and have been during my entire three terms. I have had an insight into various matters vital to our profession that I could not have had in any other way. It is my conviction that the doctors as a class are asleep at the switch as far as their interests are concerned. *They are going on the rocks* unless they wake up. The insurance companies—*not all of them*—but some of the largest of them, *are violating the spirit and intent of the Workmen's Compensation Law by openly practicing medicine.* The injured workman is entitled to his choice of a physician by the same rule of fair play that he is entitled to the choice of spiritual adviser, rabbi, priest or clergyman as the case may be.

Cases are openly "lifted" by certain insurance companies from reputable physicians and threatened with loss of their compensation unless they give up their doctor and go to the insurance company clinic, there to be attended by a young, often inexperienced doctor, whose sole recommendation to professional accomplishment is the fact that he is the nephew or the son-in-law of some high salaried insurance official. This is an *outrage* to the family physician and to the injured workman.

The action of the insurance company in brazenly practicing medicine is the best argument that can be adduced for a monopolistic state compensation law. If that comes, doctor, do you know what it means?

It means state medicine with the doctors in the employ of the state. No freedom of choice would be allowed for treatment of the individual patient. The doctor would prescribe, immunize and inject at the will and direction of a lay board and be directly responsible through voluminous reports to a bunch of medical clerks sitting in mahogany chairs and directing, supervising, criticizing and challenging.

* Senator Eighth District Kings County, New York.

Walking Upstairs

CYRUS HAMLIN, B.S., M.D.
Brooklyn, N. Y.

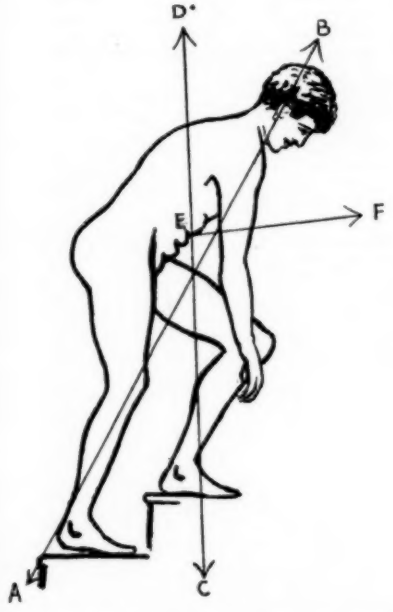
Walking, itself, is rather a complicated subject when we attempt to analyze, scientifically, as to just what muscles are used to balance the body and what group is called into action to propel it forward, to say nothing of the intricate nervous mechanism employed in this everyday act of the human race.

It has been stated by authorities on this subject that the American Indian and the Filipino have the most perfect feet. One reason for this is that they actually walk pigeon-toed, which distributes the weight of the body over the ball and the toes of the feet.

During the World War, our orthopedic surgeons discovered that many of the soldiers were afflicted with fallen arches, which obviously was a serious matter. In studying the situation, the chief cause was found to be due in a large measure to faulty instruction as to the position of the soldier at rest, which as defined in the school of the soldier is heels touching on a line with the toes turned out at about an angle of forty-five degrees. When the order "Forward March!" was given, the soldier continued to walk with the toes turned out. The well known result was that the weight of the body fell on the arch of each foot as it alternately advanced in progression. This misapplied pressure on the bones that constitute the arch of the foot caused the same to sink, and thus fallen arches ensued. The object in calling attention to this error, which is a matter of common knowledge among medical men, is to emphasize the fact that this mistake had existed for a great many years. In other words, a basic principle had not been observed and its truth not taken advantage of until the orthopedic surgeon pointed it out and corrected the error.

There is individuality in almost every act of life in which no particular harm ensues. For example, few individuals will stir a cup of coffee exactly in the same way to dissolve the sugar. But as long as the result is attained, it is not of any serious consequence. However, when basic principles are ignored, progress is retarded and too often needless suffering and unhappiness is inflicted.

The truism, "Necessity is the mother of invention," is often quoted. So it is in the case of the writer. A few years ago he noted that when ascending several flights of stairs, dyspnea and exhaustion developed which was decidedly unpleasant. Through experimentation, a method was found that has been of decided benefit. Having taught it to patients who have myocardial degeneration, elderly people, and those inflicted with obesity reports have been gratifying.



Incorrect method of walking up stairs. Line A-B movement of body, is oblique; shows deviation of angle of 35 degrees from vertical line C-D.

Area E shows compression of abdominal muscles—interfering with descent of diaphragm of muscles of respiration.

Correct method and poise of body in walking up stairs movement of body—vertical to plan of steps of stairs. A-B vertical line.

Correct standing poise.

Of course, this method cannot take the place of the elevator, which is indispensable in the modern sky scraper, yet, the great bulk of humanity must walk up stairs more or less. Any amelioration in this unpleasant task to most of us may be of great value. Habit is a hard thing to break. Patients who have fallen arches due, in a measure, to toeing out in walking, when treated by an orthopedic surgeon frequently have adhesive tape applied to the soles of the feet and the external and internal aspect of the lower part of each leg. This is to prevent this malposition and it often cures without recourse to arch supporters. Also, there will be certain exercises prescribed, such as rising on the toes so as to strengthen the weakened plantar muscles. As this method of walking upstairs calls into direct action the use of these muscles, it is obvious that it will be of benefit to those having a tendency to fallen arches.

One must practice this manner of ascending the stairs persistently in order to appreciate its value. An intelligent understanding of the procedure will be better vis-

ualized by studying the three illustrations printed herewith than by a description of the same.

In the performance of any task, especially in one like this where muscular energy is expended, the correct mental attitude should be cultivated. If not, one is half whipped before one starts. By placing the body or muscles in a position as though it was going to be hard, or in other words, bowing down too much to the task, which is precisely what one usually does in the start of walking up stairs, the impulse to the body is wrongly given by inclining it forward. This is shown in Cut I, which, of course, is exaggerated in order to make the idea more explicit. The bending of the body forward is wrong, as can be easily shown. If, while seated, one will flex the body to the thighs at an angle of forty-five degrees, it will be noted, especially if the individual is inclined to have considerable adipose tissure about the abdomen, that respiration is not as easy was when seated erectly. This is because the muscles of the abdomen are compressed, which interferes with the descent of the diaphragm. A homely illustration of this is to watch a fat man, in the same position, tying his shoe lacings. Dyspnea, as well as some cyanosis of the upper extremities, will be noted, showing respiration and circulation have been abridged more or less.

It will also be noted in the same cut that by the inclining of the body forward, undue exertion has been placed upon the left thigh muscles, particularly the anterior group, which will be found tensely contracted upon palpation. This condition continues until the knee is fully extended (pushed back) and the left leg is raised and placed on the next step. The same condition happens when the right thigh is brought into action and the right foot is placed on the next step. Furthermore, it will be noted that the motion of the body is obliquely forward, which nullifies to a certain extent the correct line of direction, which should be vertical. If one is walking upstairs, he should walk, not obliquely or sideways, but up!

Cut I illustrates the correct poise of the body in repose, which calls for the least amount of muscular exertion. Head erect, shoulders thrown back, is the position which allows free descent of the diaphragm. The Italian peasants are able to carry heavy loads on the head in assuming this pose, which they instinctively learn. Cut III illustrates the position recommended. The first principle is to assume the proper mental attitude, next, the correct pose of the body as shown in Cut II, head erect, shoulders thrown back, chest muscles relaxed so as not to interfere with descent of the diaphragm. The next point is to get as close to the first step of stairs as possible, but not so near that the toes of the advancing foot will strike the bottom of the step. The wisdom of this is easily illustrated. If one will stand twelve inches from the step, on one foot, which is the first stage in ascending stairs whatever method is used, with the other foot placed on top of the first step, and attempt to raise the body without throwing the body forward in order to get the initial impetus, it will be found that it will be almost impossible to do so. The laws of leverage apply here as can be easily visualized. It has been pointed out before that it is a mistake to bend the body forward, but to get the start by rising on the toes on the foot which is planted on the floor calls into action the posterior muscles of the leg, chiefly the soleus and gastrocnemius, which are attached to the strongest tendon of the body, i.e., the tendo Achillis that extends the foot at the ankle joint.

In simple terms, one merely raises the body upward vertically and not forwardly, rising on the toes in the manner that the ballet dancer does when she toe dances. This springing motion is used alternately with each foot as one ascends the stairs.

In tests made on normal individuals it has been found that the respirations after climbing one hundred steps in this manner are scarcely increased and the pulse rate is lower. But the most important point is that much less exhaustion ensues than when the usual method is used. For a year, observation made of individuals walking up stairs fails to disclose any person who employs this method, so as far as the writer is aware, the idea is original. Reports by physicians who may recommend or use it will be appreciated.

Measles—Deaths

A circular letter dated April 5 sent to physicians by Dr. E. S. Godfrey, Jr., Director of the Division of Communicable Diseases, New York State Department of Health, calls attention to certain fundamental facts regarding measles. It would seem that physicians would know about all there is to know about measles; and yet their practice indicates the need of more instruction regarding the disease. Probably the need to bear the known facts in mind is greater than that for instruction. Inspiration as well as instruction is needed.

Dr. Godfrey investigated epidemics in two cities, each of over 100,000 population, and over 6,000 cases were discovered in 3,500 families. He says:

"One third of the discovered families, and one-half of the discovered cases had never been reported in either epidemic, and only forty per cent of the families were reported within a week after the onset of the first case in the family."

The responsibility for failure to report cases rests on the people even more than the doctors; but the responsibility for teaching the people rests on the physicians.

Dr. Godfrey brings out the fact that the death rate for measles is especially high among three groups of children: 1, those in institutions; 2, those under three years of age; and 3, those not receiving proper hygienic care.

Intensive work has been done in the children's institutions of New York State with the result that while the death rate among cases of children under five years of age was 11.3 per cent in 1923, it was 1.9 per cent in 1926. There was little or no reduction in the incidence of cases. The fall in death rate was due to proper care of the patients from the days of onset. What has been done in institutions can be done in private practice.

Regarding the fatality rate in its relation to age, Dr. Godfrey shows that whereas 13.30 per cent of all cases were in children less than three years old, 67.33 per cent of all deaths occurred in that group. This means that the death rate among children under three years of age is five times that of other persons. The lesson is obvious—keep the babies away from cases of measles.

Regarding the care of patients afflicted with measles, Dr. Godfrey emphasizes the need of hygienic measures such as any family can carry out. Measles begins like a common cold, with no characteristic symptoms until the eruption appears on the fourth or fifth day; and during the pre-eruptive stage the patients go around the streets and to school and not only infect others, but also commit hygienic sins which result in pneumonia, ear diseases, and other complications. "It is only a cold" is a likely diagnosis of both the doctors and the parents. Public sentiment is not favorable to the control of children with "Colds," until the infections are proven to be measles or scarlet fever or other disease to which an old name may be attached.

Dr. Godfrey also discusses the passive immunization of children with serum from convalescent cases. He states that the State Department of Health has a small amount of serum available for children under three years of age and for delicate older children who have been exposed to the disease.

The control of measles is a public health problem whose solution lies principally with family physicians.—*N. Y. State J. of Med.*, April 15, 1928.

Chronic Peptic Ulcer

In 375 gastro-enterostomies performed by Robert C. Coffey, Portland, Ore. (*Journal A. M. A.*, July 7, 1928), in a twenty-four year period the mortality was 2.4 per cent, while there were ninety-six cases in which operation other than gastro-enterostomy was performed, with eleven deaths, 11.4 per cent. This discrepancy is more apparent than real because, first, the gastro-enterostomy operations were performed largely for duodenal ulcer, which is not such a serious condition as gastric ulcer, and, secondly, the ninety-six radical operations include most of the gastric ulcers and the bleeding ulcers, some of which were duodenal.

Notes on Internal Medicine for the General Practitioner

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New York

HINTON TEST FOR SYPHILIS—Among the more recent tests for syphilis, the Hinton glycerolcholesterol precipitation reaction seems one of the most important. Apparently it is more sensitive than the Wassermann test; it has the advantage that it is easily performed and requires very little apparatus. Hinton's work is being done at the Wassermann Laboratory of the Massachusetts Department of Public Health and the Department of Bacteriology of the Harvard Medical School. In working on the application of precipitation methods in the serum diagnosis of syphilis, Hinton attempted to devise some way in which the specificity of the reaction could be increased. This test is a step forward in medicine because there are innumerable cases of syphilis, especially in old age, which show a negative serum reaction to the disease, although the patients were infected many years ago. Even with our most sensitive tests we are only able to elict a positive reaction in about 80 per cent of the cases of syphilitic aortic disease. From this we may realize the necessity of a test sensitive enough to detect the underlying disease. On the other hand, it is possible that in old age, after the infection has existed for several years, that no test will ever show the syphilitic disease.

SYPHILIS IN OLD AGE—Since we know that we may not always elicit syphilis, especially in old age, we are sometimes justified in going back to the older therapeutic test. When we suspect syphilis in old age, we are justified in using mercury and the iodides. Under ordinary conditions we do not use arsphenamine or neoarsphenamine after the age of 55 except, in rare instances.

ENT. HISTOLYTICA INFECTION OF THE KIDNEYS—Although infection of the genito-urinary tract by the entameba histolytica is rare, it is a possibility. In a case seen by the author there were cysts in the urine but repeated examinations showed none in the stools. Postmortem examination showed that the kidney was infected with entameba.

MILD ENT. HISTOLYTICA INFECTIONS—It is not uncommon in private practice to find entameba infection of the gastro-intestinal tract. The patient may show no symptoms except fatigue and may not have diarrhea. Examination of the stools must be made while in warm solution and it may require several examinations before the cysts are seen. These cases are not uncommon and examination of the stools must be included in routine tests.

SPRUE—Sprue is another disease which is sometimes seen in private practice. It is characterized by diarrhea, anemia and emaciation. An examination of the stools will clear the diagnosis.

TAPEWORM—A patient was operated upon for appendicitis; the appendix was acutely inflamed but the patient complained of abdominal symptoms several months after the operation. An examination of the stools showed the presence of tapeworm.

MOVABLE LIVER—Movable liver is a rare condition. A patient had a large abdominal mass which simulated a tumor. It was freely movable and the liver was easily replaced in its proper position.

MYOCARDITIS AND BERI BERI—Myocarditis is often present in cases of beri beri.

SEBACEOUS CYSTS AND MALIGNANCY—It should not be forgotten that a sebaceous cyst may become malignant.

PROPHYLAXIS OF TETANUS—In the prophylaxis of tetanus, 1500 units of tetanus antitoxin should be given as soon as possible after the injury. A similar injection should be given ten days after the initial dose if the wound is not completely healed.

DIGITALIS, TOXIC EFFECTS IN OLD AGE—In senile cases one of the first manifestations of the toxic effect of digitalis is vertigo. It often precedes nausea and bradycardia. Vertigo may be the only symptom.

BLOOD SEDIMENTATION TEST—The blood sedimentation test is a valuable addition to our laboratory methods and is simply performed. Polak and Tollefson (*Jour. A. M. A.*, Jan. 21, 1928), believe that the test is useful in determining the time for elective operations and of great value in determining prognosis.

BROMIDE COMPARATOR—By means of the La Motte-Wuth bromide comparator it is possible to determine if the patient has bromide intoxication. The test is important in all bromide medications. The test is simply performed and is a result of the action of gold chloride on the bromide solution. The serum must be coagulated and filtered before making the test.

INFARCTION—In old cases of mitral stenosis we frequently find infarction of the kidney, spleen or other organs. Renal infarction is characterized by severe pain in the kidney but there are no special changes in the urine. Frequently the patient recovers in a few days. We may find hematuria but it is not always present. Pulmonary infarction is characterized by sharp pain in the chest and hemoptysis. Splenic infarcts cause sudden pain and the spleen may enlarge. A thrombus in the left auricle may cause fibrilation and obscure fever. Quinindine is dangerous to give in these cases.

EMACIATION IN OLD AGE—Emaciation without any special cause is frequently a normal process in old age. In senile cardiac cases we frequently find that the patient is losing weight rapidly, in fact we might be led to suspect cancer. This process usually relieves the heart of extra strain and frequently the patient is able to lessen cardiac medication.

DENTAL INFECTION AND OBSCURE FEVER—In cases of obscure fever we should search for a focus of infection in the teeth.

TREACHEROUS CALM OF APPENDICITIS—The treacherous calm of appendicitis warrants careful attention. The patient shows improvement in nearly every way; the pain disappears, there is no febrile temperature, but if we watch the pulse-rate we find that it is increasing. No time should be lost in operating at this moment because it indicates a ruptured appendix.

CHILL DURING COURSE OF APPENDICITIS—A chill during the course of appendicitis usually indicates the beginning of gangrene.

Epitome

1. Hinton test for syphilis is very sensitive and easily performed.
2. Often impossible to obtain positive blood reactions in syphilis in old age.
3. Ent. histolytica may infect the kidney.
4. In private practice we may find ent. histolytica

infections of the gastro-intestinal tract, causing few or no symptoms.

5. Sprue is characterized by diarrhea, anemia and emaciation.

6. Movable liver may be mistaken for abdominal tumor.

7. Myocarditis may be caused by beri beri.

8. Sebaceous cysts may become malignant.

9. Vertigo may be a symptom of the toxic effect of digitalis in old age.

10. Blood sedimentation test easily performed and valuable.

11. By means of a bromide comparator we may detect bromide intoxication.

12. In old cases of mitral stenosis we may get infarction of the kidney, spleen or other organs.

13. Thrombus in left auricle cause of obscure fever.

14. Dental infection may cause obscure fever.

15. Chill usually indicates beginning of gangrene in cases of appendicitis.

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Human Death

An Analytical Study*

Dr. Arthur MacDonald,

Washington, D. C.

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The ostrich finding escape from a supposed enemy to be impossible, ignores the inevitable and hides its head in the sand. Thus people treat death. In order to avoid the word death, we substitute many terms for it, as: passing away, a going to rest; dissolution, lasting sleep, release, eternal rest, end, cessation, ebb of life. Such euphemisms are merely attempts to disguise the unwelcome fact.

The dread of death is based but little upon the idea of future existence. In the great majority of cases, it relates to the physical act of dying, which is popularly regarded as suffering, if not agony.

The dying hour or time is confused with the condition of disease or injury and suffering which it involves, called "pangs of dissolution", "death agony"; with this go the mourning clothes, the shroud, casket, grave, cemetery and the like, completing the picture.

The fear of things is much worse than the things themselves; so in death; as Shakespeare says, "the sense of death is most in apprehension."

Death is simply a negation; the end of physical life. The body is changing, and death is one of these changes.

Homer makes sleep and death twins, Hesiod the sons of night.

In the last European slaughter house (World War) death, became so common as to be called "Poor Death."

We might add that the restfulness of sleep and the peacefulness of death should be twins.

Dead Body Superstition

We are aware that medical and scientific persons generally have no dead-body superstition. Yet this is not true of many most intelligent, highly educated and cultured people. Hence, the few words which follow.

If it were necessary to amputate your hand, and if it had some anatomical peculiarity of scientific interest, you would doubtless allow it to be preserved for study. Now, imagine yourself looking at your (?) hand? in the glass jar before you. Is it your hand? No. It is *a* hand that *was* yours; your blood is no more in it—your life has gone out of it.

Thus our bodies, after death, are no longer a part of ourselves, no more than a house in which we once lived. It is true we may have become attached to the house which we formerly called our home; but it may have burnt down, or been otherwise destroyed. So these former bodies of ours decompose, disintegrate and return to nature, as the Bible says, "Dust to dust."

This superstition does not seem with many to apply to the dead body of an animal, but there is no difference; the animal's life has gone out of his body; it is simply *a* body in which he once lived, and like the human body, returns to earth by the same process of nature.

Definitions of Death

It will be interesting to consider a few definitions of death, illustrating the great difficulties involved, and showing the necessity of a systematic scientific study of it.

Death may be defined as the cessation of all vital phenomena without capability of resuscitation. The precise and immediate cause of death is not explained: What causes the cessation of heart beating. What affects those nervous impulses of the respiratory center which control the breathing. Asphyxiated nerve cells never can recuperate; lack of oxygeen is fatal. In the majority of deaths respiration fails before the heart stops. Yet, in certain cases, circulatory conditions may be the primary cause, from failure of blood to supply the center. On approaching normal death, there seems to be irrespective of social or religious conditions (death is a leveler), a sort of benumbing or becalming influence, which ends, as is usual, in a peaceful sleep, deepening, as death draws nigh, into a profound unconsciousness; we come into the world unconscious and leave it in like manner. In Ecclesiastes it reads: "As one dieth, so dieth the other," in comparing man to the animal. At least 90 per cent of 1500 deaths observed by an experienced physician (Chase) died in unconsciousness. Natural normal death is by gradual and slow exhaustion. But such a death is rare. We die prematurely, being poisoned by the toxins and virus of every nature; our cells are choked under a mass of connective tissue, or divorced by certain phagocites (Metchnikoff).

Natural death is the passing of exhausted old age into

* The author has made a *general* study of death, published in 1921. In this analytical study, he has depended on leading practitioners and specialists of this and other countries, as indicated in sources of information at end of this article.

eternal sleep imperceptibly; the gentilia and accessory organs lie dormant for years, having a shorter life of activity than the whole organism. Internal adaptation has its limits; a continually modified equilibrium strains the remaining organs, so that disintegration exceeds assimilation, so that strength of surviving cells is diminished, until somatic death is reached. Circulatory, respiratory and nerves are the triumvirate of organs necessary to life. The individual rarely dies of the disease he has (Osler).

Somatic death is followed by molecular or cellular death; the hair and nails grow after death. Physiologic death occurs after the cells of the body are worn out and unable to carry on their functions. Pathologic death occurs from unnatural causes, when the individual is not worn out and the cells are still active.

The definition of progressive death is indicated, when the rate of growth decreases from birth to old age. The weight of the embryo $= \frac{\text{Age (days)}}{37}$. Towards old age bones become more brittle, the cartilages become more rigid and calcerous; the crystalline lens gradually loses its elasticity; muscles lose their vigor; hair its pigment, cell nucleus and nerves become smaller; metabolism becomes less and less perfect, power of protoplasm more limited. Death usually results from the failure of one of the complex mechanisms while the majority of tissues are able to maintain themselves.

Death of an organism is a progressive cessation of the functions of its various parts; thus discontinuance of the functions of the heart, lung or brain means death; discontinuance of the functions of intestine, liver and kidneys brings death after a number of days. Death is usually inevitable after cessation of breathing, and certain after cessation of heart beat, which stops nourishment of the tissues.

Brain may indicate death, when it is abrupt, atrocious, abdominal with localized or general tenderness or decided defensive rigidity, with symptoms of shock or collapse, and drop in blood pressure, if there be delay in treatment.

According to two specialists (Halluin and Crile), there are two forms or stages of death:

1. Apparent death: vital functions appear to have ceased; respiration is so slight, that special procedure are necessary to detect it; it can maintain life; the heart beats so feebly as to be detected only by stethoscope; there is no motor activity; skin is pale and cold, eyes motionless, and not seeing.

2. Relative death: Condition of body during few minures between stopping of heart and of respiration. In the early stages of relative death resuscitation is possible, also in later stages, but certain higher functions are lost (Crile).

3. Absolute death: Here resuscitation of the body is impossible as a whole. In a recent study of a number of dying persons, Vaschide and Vurpas found a similarity in ways of death. In this study were observed three stages:

1. Manifested in the vaso-motor modifications, respiratory and circulatory, which resemble those in animals, where the cerebral cortex has been destroyed. These vaso-motor troubles often end in paralysis. They precede the consecutive changes, which characterize the dying time; there is first an exhaustion of consciousness and psycho-physical phenomena, which constitute the personality.

2. The second stage manifests itself in the typical bulbar activity and by troubles of coordination, which recall certain affections of the medulla; the agony of the medulla, variable according to the patient, submits to the influence of infectious diseases, or patient is timid by nature, or fears death, which emotion is shown in the face.

3. The third stage of death is the so-called "death rattle," which means a lessening of general vitality; survival is now due in great measure to the intrinsic life of the cardiac muscle and its impulsive force; the heart acts mechanically and owing to its action on the phrenic nerve, that respiration continues, either by superficial or by deep and infrequent inspirations.

In this study, the following psychological and biological conditions were observed: The course of the disease, the psychological and biological manifestations, which go along with the different phases of the disease: the spasms, the last movements, the last gestures, the heart beats, state of pulse, aspect of respiration: the pulse where strongest in the carotid region, and observable by the eye by the rising of the skin, and compared with the respiration at the same time; so the position of the eyes and the facial expression; the capillary pulse and its different speeds on both hands, and also the respiration curve and heart curve with the latest instruments of precision.

Dying Separate From Disease

The actual dying time is sometimes confounded with symptoms of disease that precede it and lead up to the actual dying period. These symptoms are often more severe in patients who recover, than in those who die. As a rule, the urgent symptoms of disease subside, when dying begins; the disease has conquered, the struggle is ended, the body is fatigued, there is pause, all is quiet, the patient is exhausted, perhaps too weak to feel pain, and dying begins.

Convulsions often occurring during the dying time, meaning a loss of consciousness, and no capacity to feel pain; they are automatic, like those in epilepsy, in which the patient is unconscious. The convulsive movements at the last moments, and with which the patient may expire, may constitute the so-called "death struggle," but there is little or no pain.

Then comes the death of the heart, always slow. The heart defends itself; it represents the supreme source of life, and the path of biological phenomena, unknown and as yet little studied.

Reasons for Studying Death

It is a curious fact that as yet there seems to have been no systematic and scientific study of human death. There have been more or less sporadic efforts to make such investigations in exceptional and interesting pathological cases. But the regular order, so to speak, or the average manner of death is not known. Some of the main reasons for such study are:

To gain trustworthy and general knowledge of what most often takes place in the dying hour, including details.

To learn the manner of death for different diseases and the per cent of those conscious and unconscious.

To find in what per cent of cases there is severe pain, slight pain and no pain, and nature of the pain.

To note details in exceptional and special cases and the causes of these phenomena and the length of dying time, and nature of pain, if any.

To determine the characteristics and differences in dying between infants, children, adolescents, adults before middle life, during middle life, in old age and from eighty to one hundred years of age.

To present eventually a general picture of the dying time, based upon a sufficient number of observa-

tions, and with instruments of precision when possible.

That with such knowledge, the treatment of patients during the dying time may be more humane and delicately done.

That in cases that are liable to be painful, proper precautions may be taken in advance, so that pain may be avoided or greatly lessened.

That finally the knowledge of the dying time may be so increased that physical death will cease to be feared or dreaded by all persons, since through such knowledge pain may be practically eliminated and death may be made easy, and placid.*

If it be important to study disease in order to lessen its evil effects and to lessen pain and sickness in general, it is all the more important to study death which is the worst effect of disease, that is to study those conditions in disease which are of a more dangerous nature and more liable to lead to death, to find out how to detect those fatal conditions, and thus investigate, divert or stop them.

To foretell with great probability whether the patient will get well or not is of importance to the character of a physician, and to the comfort of the patient's friends. If the malady is incurable and the end death, the family should be informed, otherwise the grief may be increased, by the idea that the physician was taken by surprise, and so had not given the patient the best treatment, and the catastrophe might have been prevented. Exact knowledge of death, enables the physician to inform relatives of the approach of death, to stop the giving of medicaments in certain cases and to notify the minister of religion.

Knowledge of death according to disease can be had from (1) Death from old age, (2) from fatal injuries, (3) power and actions of best remedies. The severe lesions of important organs can be fatal in very different ways, and death may be averted by very opposite remedies (Alison). Unimpaired constitutions tend to spontaneous favorable results.

During disease life may be ended in various ways, and by investigating these, knowledge may be obtained, by which the tendency to death may be averted or at least put off.

II.—General Signs of Death

The transition from life to death is gradual, but certain phenomena occur so definitely at the borderline, that they can be considered as signs of death. One general sign consists of changes in the appearance of the small vessels, especially the veins all over the body. Normally, the small vessels are constantly filled, with slight variations in volume due to pulsation.

The earlier signs of death are insensibility and inability to move, preceded by death rattle.

Usually, respiration stops before the heart and ceases sooner in infants than in adults.

Most of the minor signs of death depend upon absence of circulation; the skin has a leaden color or lividity and loses its translucency; the muscular membranes become pale; hands show no pink tinge (diaphanous test); palms and soles of feet are more or less yellow; a small artery is empty; pressure on a finger nail will drive blood away, leaving a white area; cupping brings no blood; caustic applied to skin will form no eschar.

Loss of more than half of body weight means death.

Gritting of teeth in fever in adults, unless a habit, is a serious omen.

Loss of reflexes is early sign; mirror, flame or feather before mouth or nose, or vessel containing fluid on epigastrium indicate absence of respiration; opening of temporal or radial artery, if empty, death has occurred; subcutaneous injection of ammonia, producing no congestion or vesicle formed in dead body; subcutaneous injection of fluorescin (Icard's test) causes in living body a greenish color in the skin, mucous membranes and conjunctival, but not in dead body.

Coldness of feet and knees in a serious turn of disease, is noted by old nurses, especially when there is high temperature. Death hunger is an abnormal appetite in last few days of life, probably an effort to overcome exhaustion; mostly seen in consumptives, and sometimes in typhoid fever. Such patients rarely eat much of the food ordered.

Sliding down to foot of bed is a common sign.

Left unilateral dropsy, beginning at the foot and extending up the body is a very serious sign.

A conspicuous phenomenon is an up and down rocking movement of the head caused by sternomastoid breathing, after grave symptoms have appeared and not long before death; this rocking is synchronous with the breathing; as a forcible raising of head and chin, giving a fanciful beckoning motion to the head. After this sets in there is a sure and progressive decline to the end. In the study of one hundred cases, the longest time of breathing was seven hours and the shortest one minute. The largest number fell between ten and forty-five minutes; it means that death is probable in a half an hour.

The act of dying begins, when reliable signs indicate that the vital powers are already so utterly reduced, that they are beyond the possibility of restoration; thus a sharp, pinched nose, eyes sunk in the orbits and hollow; the ears pale, cold, shrunk, with lobes inverted, and the face pallid, livid or black; these together make up the symptoms given by Hypocrates.

They show dying to have commenced; they are signs of utter exhaustion of circulation and muscular system, a loosening of all the forces by which life is maintained.

There may also be noted the glazed half-closed eye, dropped jaw, open mouth; blanched color and flaccid lip; cold clammy perspiration on head and neck; hurried shallow respiration, or slow, stertorous (sonorous) breathing, with rattle in the throat; irregular pulse, unequal, weak and very frequent; the patient prostrate upon his back, and sliding down in the bed; arms and legs extended, tossed in disorder, the hands waving languidly before the face, groping in the air, fondling with the sheets, or picking at the bed clothes. These latter symptoms come late; they show that death is just at hand.

The breathing is slow, infrequent and laborious; the respiratory movements are mostly dissimilar; shortly before death, movements are still more rare, and very easy, except for a few hiccoughs and sighing.

The bronchial tubes are almost always filled with mucus, which is not expelled by cough, and at the end there are audible respiration sounds called "death rattle"; the throat is widely open and the oesophagus paralyzed, so that beverages fall into the stomach with a rumbling noise.

Involuntary evacuation of foeces and urine is quite common, but much less seldom, lachrymation, emission of semen, or prostatic fluid. Respiration may be going on, yet not observable, a minute before the mouth and nostrils may collect moisture from the breath; cotton wool on the lips may show an air current and life.

* The author himself is seeking opportunity to make observations on cases of death. He will, therefore, consider it a great favor if any reader who makes observations and studies of cases during the dying time, will send him a copy of his or her notes and results, for which due credit will be given when sufficient data are received to justify publication. Dr. Arthur MacDonald, The Congressional Apartments, 100 E. Capitol Street, Washington, D. C.

A cup of water placed on the chest will show every movement.

Ashy skin color, absence of pink tint in transparent parts under strong light, diminished tension of eye ball, opacity of cornea; no reaction of pupil to light, or no reaction in the skin to irritants are additional means of determining death.

Vomiting of frothy mucus mixed with blood, except in acute hemorrhage or convulsions is a fairly certain sign. Continued coffee-ground colored vomit, except in gastric ulcer is fairly certain; black vomit of yellow fever has same weight. Black vomit 48 hours after operation is almost always fatal. In appoplectic coma when mucus (not saliva) comes from the mouth at each expiration is a sign of near death.

Hematogenus jaundice (yellow skin, from disintegrated red corpuscles) following fevers, snake bite, typhoid, etc., are generally fatal. Petechiae (small effusion blood spots), large in exhausted patient, especially in cancer or reneal disease, mean end, within a month or two.

Mouth ulcers in any wasting disease may mean approaching death. Persistent and uncontrollable hiccough in any serious illness portends death.

Profuse sweating at beginning of acute febrile disease, except in rheumatic fever, with permanent high temperature, indicates great weakness and gravity; if with this there be cyanotic hue of face, ears and nails, it means extreme gravity.

The stopping of circulation stops life; seven minutes seems to be the limit. Very rarely can respiration be suspended, and generally not more than seven minutes. Diseases of the kidneys often cause sudden death. It would seem that the highly developed nervous system in man makes death a little different from that in a plant or animal. There seems to be a death instinct; the bottom of life has dropped out, the other organs are secondary as compared with the nervous system.

III—Some General Forms of Death

In fatal cases, various processes concur in bringing on death. But the apparently different forms of dying can be reduced to comparatively a small number of distinct catagories.

Death by Asthenia: Failure of contractile period in the heart. The heart is not empty but full.

In asthenia the nervous system is affected and through it the heart, in sudden death. Death can result from strong mental emotion; or concussion jarring the brain, blows upon epigastrium; certain kinds of apoplexy arrest the heart; lightning and certain forms of apoplexy destroy life by arresting the contractile power of the heart.

This mode of death is more directly connected with the heart itself, independent of the supply of blood; that is the contractile power of the heart may fail. Many poisons and disease due to poisons in the blood cause death in this way; also poisons with extensive mortification of organs, of acute peritonitis and of cholera, die by asthenia. The symptoms are feeble and frequent pulse, ultimately not perceptible; extreme muscular debility, but the senses remain, often painfully acute till the end.

Starvation is a type of death between anaemia and asthenia.

Death by Apnoea: (privation of breath): Air can be kept from the lungs by stoppage of mouth and nostrils (smothering), or by submersion (drowning) or in gases without oxygen; by mechanical obstruction of the larynx or trachae, by a piece of food (choking); or by bow-string (strangulation); by much pressure on chest or abdomen, preventing ribs and diaphragm from moving. This immovable state of lung case can be produced in tetanus, or by strychnine poison; by paralysis of some muscles; by injury or disease of spinal chord above the origin of the nerves, that give off the phrenic nerve; or by section of phrenic and intercostal nerves; or when air gets freely to surface of both lungs through breaks in thoracic walls; when both pleurae become filled with any liquid.

Whenever the privation of air is sudden and complete: Strong contractions of muscles of breathing with great efforts to breathe with extreme distress (transient), succeeded by sensations (not unpleasant) of vertigo, then loss of consciousness and convulsions; at length all effort ceases; there are a few irregular twitchings or tremors of the limbs, but the heart and pulse may continue for a short time after all other signs of life are over; there is no asphyxia until the very last. During this two or three minutes process, the face is at first flushed and turgid, then livid and purplish; the veins of head and neck swell and the eyeballs seem to protrude; at length the heart stops permanently.

Death from *apnoea* in chronic diseases is indicated by phenomena similar to those in sudden death: want of breath, shoulders are elevated, nostrils dilated, energetic action of muscles of respiration; countenance dusky, lips, ears and eyelids livid; sensations of vertigo, delirious thoughts of gasping sufferers.

Death by apnoea is very common, and may be produced by anything which narrows the chink of the glottis. Forcible pressure upon the chest, as sometimes occurs in resisting crowds during a continued crush of people, or when workmen are buried by falls of earth; in short, whatever obstructs the movements of the lung case more than three or four minutes produces death. Oedema of the glottis, diseases of the spinal chord above the origin of the respiratory nerves (prenic, intercostals, and spinal accessory), serious effusion into the pleural cavities, sudden filling of lungs, or collapse of lung in bronchitis; all these cases produce fatal results in their combination, according to the disease. One may be conscious up to the last moment. Another lies unconscious for hours or days.

Death by Suspension of Respiration: When air to the lungs is prevented by direct obstruction to the air passages in choking, or to chest action, as ceasing of muscles of respiration to function, due to disease or injury to the brain producing insensibility, this is respiration death.

The symptoms of death by suspension of respiration are strong but ineffectual efforts to contract the respiratory muscles, and struggling attempts to breathe, amounting to agony, of short duration, followed by vertigo, loss of consciousness, and convulsions; at last all efforts stop; twitchings of the limbs alone remain, the muscles relax, and the sphincters yield. However, the heart and pulse continue to act, usually from three to four minutes longer. Here rests the hope for resuscitation.

The prolonged action of the heart circulates dark venous blood and the face is flushed at first, becomes turgid, then livid and purple, the veins of head and neck swell, eyeballs protrude; at length the heart ceases.

Death from Strangulation or Hanging: (1) The trachaea is obstructed; so that air cannot enter the lungs; (2) the blood passing through the lungs is not arrested; (3) dark colored blood not purified by exposure to air is transmitted to the left side of the heart and from thence to the brain and other organs; (4) the heart continues to act, circulating dark colored blood, but it gradually weakens, and in a few minutes ceases altogether.

Death by Coma: Morbid states of the brain produce stupor, no outward sensibility; respiration is slow, irregular and stertorous; voluntary attention to breathing is lost; but instinctive movements continue; then these fail, chest ceases to expand, blood is no longer aerated, and death then is like in apnoea, where the chemical functions of lungs cease first; and then the venous blood in the arteries suspends sensibility; but in death by coma, the sensibility ceases *first,* and as a result, the movements of the thorax and chemism of the lungs stop also. Venous blood in the arteries is the cause of apnoea and the effect in coma. In apoplexy and hydrocephalus, death is usually by coma, as it is in sudden affections of the brain. Coma is the commonest form of death (60 per cent); when it occurs in acute disease, except in typhoid and menengitis, the end is almost fatal.

IV—Death in Systems and Organs of Body

Death results because some organ system, or groups of organ systems fails to continue its functions (Pearl). Failure of the lungs, heart and kidneys systems have an overwhelmingly great effect in causing death. The body does not die all at once, but death strikes successively and progressively the different parts of the organism, according to the nature of the death, as by the brain, heart or lung.

Growth of living being depends on nutrition. The special relations of growing organs of the body are not all nourished alike. Therefore, the superficial parts nearer the sources of food grow better than the parts more distant. Those at the center atrophy. Owing therefore, to this condition of assimilation, nervous conditions are produced. The atrophy of these nervous centers injures the growth of the organism, and cause a setback and death (Mühlman).

Death Beginning in the Heart is sometimes instantaneous; the person turns pale, falls back or drops down and dies with one gasp. However, death more often takes place slowly, with a more lengthened period of exhaustion, occurring by syncope (swoon) or asthenia (loss of strength).

In syncope, there is paleness of the face and lips; cold sweats, dimness of vision, dilated pupils, vertigo, weak, irregular pulse, and quick insensibility. With these symptoms there is sometimes nausea, vomiting, restlessness and tossing of limbs and transient delirium, irregular breathing, sighing, gasping and convulsions once or twice repeated before the fatal end.

Brouardel has shown in the case of a guillotined man the heart beat for an hour after the execution.

Evidence of cardiac activity was registered by the electro-cardiograph from six to thirty-five minutes after all the usual signs of death had occurred. The circulation may be stopped by a clot of fibrin (whitish protein from blood) in the venous stream, which plugs the pulmonary artery; if obstruction be complete, death can be instantaneous, otherwise extreme dysponoea, pallor and faintness, and death within a few minutes or several hours.

Pulse and Death

When the pulse disappears in the recumbent position from the wrist for the first time, recovery is rare, except in cardiac diseases, or severe hemorrhage.

An irregular pulse for the first time is cause for alarm, if not due to sinus arrythmia or premature contractions. In hemorrhage it is omnious; if there be no jactitation (tossing about), there is hope; much tossing about makes death almost certain.

Pulsus alternus may (when felt by finger) mean death within a short interval. In cardiac disease, within a month. Reilly notes a simulating pulsus alternus, followed soon by death; there are four or five regular beats of good tension; then the beat sinks under the finger with about one-half the tension of the former beats, due to extra systole; this is most common in deaths from skull fracture.

In coma 100 pulse may mean death in eight to ten hours. In an adult, except in paroxysmal tachycardia, exolthalmic goiter and pulmonary tubercular peri-carditis a pulse of 140 continued for more than an hour, may mean death. Except in pericarditis, a pulse gradually mounting to 160, presages death. In acute diseases, a pulse steadily increasing indicates early dissolution. Pulse signs are less certain in children and the aged. Pulse is uncertain guide as to death in tuberculosis. A very sick person (with no cardiac disease), whose pulse ceases from the wrist, when the hand is raised vertically over the head, may die within twenty-four hours. Gallop rhythm with no rheumatic carditis is almost always fatal. A very sick person with rapid pulse for weeks, dropping to 50 or 60, portends death. Persistent firm pulse in coma with hemphlegia is a fatal sign. In all infectious diseases, a sharp, strong, distinct pulmonary valve sound indicates death will not occur for at least twelve hours. Alternating pulse (stronger and weaker beats) as the result of exercise, or in connection with extra systoles, means extreme exhaustion, and is a herald of death not many months distant.

Blood Pressure, Respiration: When the blood pressure (Gibson) falls below the pulse rate numerically in pneumonia, it is of value as a death sign in young strong adults, rather than in children and old persons. A Cheyne-Stokes type of respiration, well marked in a sick person, is a death sign; in coma except uremic, it is almost always a fatal sign. When rapid breathing (over 40) follows, death is at hand; a marked disproportion between inspiration and expiration is suggestive, and with rapid pulse, except in shock or hemorrhage, is nearly fatal, exemplified in air hunger (Kussmaul) in diabetes; here continued sighing respiration has like meaning.

In patient not suffering from asthma, sternocleidomastoid breathing (flexes head and neck) is a fatal sign. Cold respiration from mouth and nose is a sign. A persistent up and down motion of Adam's apple means a rapid fatal issue (Schrady).

The so-called death rattle is a positive death sign; when persisting for four or five hours, recovery is rare; in an unconscious patient it is almost always fatal.

Black or bloody tinged saliva running out of the side of the mouth in coma is a fatal sign. In the last few minutes of life, if there be an enormous quantity of white frothy fluid flowing in a steady stream from the nostrils, death is only a matter of minutes.

In death beginning with the lungs: From asphyxia or suffocation, there is laborious heaving of the chest, strong but ineffectual contractions of the respiratory muscles and distress about the breast. At first the face is flushed, turgid, then livid and purple; the veins of the neck and head swell, and the eyes seem to protrude from their sockets. There is vertigo, then loss of consciousness, and then convulsions. The livid face and labored breathing are not signs of severe suffering, for circulation of undecarboruged blood, benumbs sensibility and then abolishes it. Disturbance of respiration is often the only apparent source of uneasiness of the dying.

In brain death: Life is destroyed indirectly—that is by its influence on the lungs, heart, and so by coma or asthenia.

In coma, there is stupor more or less profound; sen-

sibility to outward impressions is abolished, at once, but more often gradually; respiration is slow, irregular, stertorious, voluntary attention to breathing is gone, but instinctive motions continue. After a time the chest does not expand, blood is no longer aërated, and the changes follow as in death, beginning with the lungs, which is the way that most fatal disorders of the brain cause death.

If death starts from the brain and acts through the heart, it is sudden, and in the way of shock as in some of the worst cases of apoplexy, or slower by exhaustion or asthenia, as in some cases of delirium tremens or frenzy.

All these ways of dying are frequently combined in the same individual, complicating matters, sometimes increasing, or lessening the suffering; thus coma, coming from the brain, supervening on lung disease, first lessens, if not extinguishes, distress and anguish that otherwise might accompany them. Such mixed modes of death occur, especially in fevers.

Muscles and Death

The external muscles are the first to lose their power of responding to the will; movements are tremulous, rather feebly convulsive; sometimes more or less generalized muscular contractions occur without producing any tension of tendons on movements of limbs; the body slides downward in bed, the limbs fall like lead when raised up and let go.

Disappearance of peripheral reflexes, except in disease of central nervous system, often means death. Edema of glottis of person over 45 may be fatal after a few hours. Needle into biceps muscle gives signs of oxidation in life.

Loss of response to electricity and loss of sphincter control is always grave, except in coma.

The Heart and Death

If a healthy person runs rapidly for a while, there is congested face, superficial veins engorged, breathing short and hurried, pulse rapid and low in volume, pericardal impulse diffuse, systolic pressure over 150, a murmur; but in a healthy person, these signs would abate in five minutes. But if they persisted, the border line between heart health and heart affection would have been crossed. A heart is not considered normal when after exercise, hurried breathing and a rapid rate persist for several minutes.

Deterioration of the heart may at first be due to nervous influences; there may be cessation of function, which by stimulation can come to be normal. By chemical changes the heart can be so far depressed as not to be able to recover. The final stage or absolute death of the tissue, shuts out recovery.

Factors in heart action are (1) mechanism in the medulla, (2) automatic function in heart itself as nodal tissue, (3) heart muscle itself and its blood supply.

In dying person, inadequate tissue oxidation with accumulation of carbon dioxide, is a most important factor. The electro-cardiograph in seven patients with acute infectious diseases (without cardiac involvement), showed the ventricle (in 4 cases) outlasting auricle, and the reverse in two cases. Arrthythmiass (absence of rhythm) occurred with delay in five cases.

Diphtheria affects the heart in 22 per cent of cases; scarlet fever in 5 per cent. Influenza is very often attended by heart muscle involvement, especially in short periods of convalescence, so that we have post influenzal myocarditis. Pneumonia affects the heart in 10 per cent of cases. Chorea, acute rheumatic fever and tonsilitis, have almost a selective affinity for heart tissue.

Eyes and Death

Sometimes just before death, the eyelids are raised, and a look of recognition of those around is permitted the dying one; less often there is an expression of agony in the eye, but this may not indicate suffering, but increasing insensibility.

Changes in eyes are due to loss of circulation; loss of elasticity in eyelids and globe; the eye sinks back in socket, and appears flat and wrinkled due to loss of aqueous and vitreous humors; is glazed, without luster, sometimes soft and flabby; cornea is opaque during last hours of death; pupils dilate near death and in about an hour contract, usually unequally, lasting for three or four days; death usually occurs with eyes and mouth open, especially in asphyxiation and sudden death, while in coma eyes may be closed.

In most diseases, just before death the pupil dilates much. A glazed pupil means death is at hand; a film over the eyes is almost always a fatal sign. The death stare or fixed eye is probably due to a dilated non-reactive pupil.

Tight closing of eyes with firm and rapid pulse, except in hysteria, means death is near. Eyes half open during sleep is a grave sign, if not due to prostration from diarrhoea. Tendency of eyes to turn out occasionally means death in a few hours.

Ripault's sign: External pressure upon eye affects permanently soundness of pupil. The mechanical deformity of the pupil is easily noted and is a sign of death. A drop of ether is instilled into the conjunctival sac of one eye, the other being used as control; reducing of the conjunctiva shows life.

Loss of transparency of the cornea and dilation of the pupil, which occurs at moment of death; cornea soon becomes clouded; eyes look directly forward and are without expression.

Larcher's sign is grayish cloudy discoloration of the conjunctiva, which are soon blackened, as an indication of death.

Lecha Marzo Test: Blue litmus paper under the eyelids, if reaction is acid, death is assured: acid reaction never occurs in life; the acid reaction occurs from 1½ (sometimes one-half hour) to 7½ hours after death; low temperature may impair it.

A very sick patient, with previously normal reflexes, but now with no reaction of pupil to light, indicates death is near.

V—Death According to Disease

The manner of death often varies according to the disease. Death is a natural termination of a successful disease. Many specific fevers are fatal with the supervention of typhoid symptoms; many exhausting diseases bring death simply by debility, and other affections by allied conditions of syncope and collapse.

In general, we die through impairment of brain, heart, lungs or kidneys, but as the functions of these organs are mutually dependent upon each other, the impairment of any one may lead to death. While the mode of dying may be chiefly through the functions of another disease. Thus, the mode of dying is usually complex, involving the functions of other diseases.

To understand death, we must note how and when the various organs begin to languish, and how they may be best sustained to continue life.

Death from disease is generally complicated, as many organs are affected, various functions languish and different causes are acting at the same time. Sudden death is better understood.

Diseases of the air passages or lungs when fatal end in asphyxia.

Renal diseases, when fatal, end in uremic poisoning and brain diseases induce coma, which culminates in death.

In apoplexy, if cerebral hemorrhage presses on respiratory center in the medulla or upon vagus nerve, the end is fatal.

Pus accumulation in the brain, without free exit, is always a menace and will in the end destroy life.

To die of pneumonia is said to be almost the natural end of old people.

Broncho-pneumonia in children enfeebled by constitutional disease and prolonged fevers, is terribly fatal.

Cerebro-spinal menengitis in children under two years of age is highly fatal. A severe onset, marked coma, or delirium, convulsions, high fever and hydrocephalus are of grave omen.

Whooping cough with its complications is a very fatal affection in children under five years of age.

In lockjaw, the spasm supervening on a wound is fatal.

In *diabetes mellitus* with dysponoeic coma (air hunger or Keesmaul) with long, deep in- and ex-pirations, the pulse grows weak and death may come within twenty-four hours.

Chronic Nephritis: Death is caused by great effusion with oedema of the lungs, by uraemia or by secondary inflammation of the serous membranes.

Pernicious or Addisonian Anaemia (Addison's Disease): is usually fatal.

Forms of death in most acute diseases are: Low blood pressure, with increased heart rapidity; tympanites (abdominal distension); the patient has the appearance of excessive bleeding and profound shock; irregular pulse, followed by delirium, restlessness, hallucinations, later stupor and coma; occasionally heart is slower but usually it increases. The patient dies when this symptom develops.

Another less often form in acute disease, is cyonosis and great dyspnea; jugulars are full and pulsating and often over the heart; heart dullness is increasel to the right, and the lower dullness increases downward; death is here almost certain.

In acute and sub-acute pericarditis, some ominous signs are: attacks of syncope.

1. A tendency to drowsiness, delirium or persistent insomnia.
2. An excessively rapid and extreme filling of the pericardium; if unrelieved, death may come in a few hours.
3. Presence of a purulent or sanius effusion makes recovery rare without surgical relief.

Death in Aortic insufficiency: Most often in men in middle life; it may be well borne for years; but when produced by a chronic and progressive endocarditis, circulatory disturbance is severe and short; in advanced years, it is likely to be complicated with angina pectoris, which may be fatal.

An aortis in its advanced stages, an abruptly enforced orthopneic dyspnea which makes the patient sit or even stand up, may indicate impending dissolution. In such cases to enforce recumbent or sitting position can cause instant death.

Death in myocarditis: Most frequent cause of sudden death, through thrombosis or embolism of the coronary artery, weak, irregular and slow heart action, and incompetency, as shown by feebleness, prostration, dyspnea on exertion, pain and palpitation and syncope or epileptic conculsions, Stokes-Adams syndrome, these patients ultimately die on one of the attacks, or from dilatation.

Death in fatty heart degeneration: Death may often be sudden, or by syncope, liable to occur in convalescence from injury, suggesting the avoidance of conditions that might lead to syncope.

In apoplexy, after tenth day even, irritableness and restlessness show death to be near; most cases are bathed in cold sweat just before death.

In lobar pneumonia, profound cyanosis of the finger nails is usually the forerunner of death. In mitral stenosis (in terminal mitral lesions), when there is inability to breathe except in upright postion (orthopneic), breathing hard and rolling of head listlessly from side to side is almost certainly a forerunner of death. A loud churning noise with each respiration, as if the abdomen contained much fluid in penumonia of children and often in adults is a death sign.

Death by Anaemia: If blood be lost to such an extent, from a wound, or hemorrhage through disease, and the flow is not stopped, the state of faint or syncope continues, the heart action ceases, because its stimulus, the blood, is withdrawn from it, or is not of sufficient quantity.

The symptoms of this mode of dying are: paleness of face and lips, cold sweats, dizziness of vision, dilated pupils, vertigo, slow, weak and irregular pulse, and speedy insensibility. In sudden and profuse hemorrhage (as from uterus (in flooding), there may be nausea, if not vomiting; restlessness, tossing of the limbs, irregular sighing, breathing, delirium, and one or two convulsions, before the end.

Like this form of dying, is slow exhaustion in lingering disorders, as in phthisis, diabetes and in dysintery, or moderate hemorrhages often repeated; starvation dying is by both anemia and asthemia.

Death in Relapsing fever: Uncontrollable vomiting, great thirst, very rapid pulse, hectic, circumscribed flush of face, jaundice, watchfulness and delirium, indicate death.

Death in Typhoid fever: In fatal cases, the intensity of the fever is very great; death occurs either very early associated with brain congestion, or later due to ulcerated intestines, on the verge of perforation; the pulse becomes rapid and small; cold, clammy sweats appear, and the body gives out a putrid odor.

In scarlet fever, ashy tint of face, with purple blue of the nails, white lines about mouth, and whispering voice indicates early death.

In tuberculous meningitis, the disappearance of esinophils (a cell stained with rose color) from the blood indicates nearness of death.

Addison's disease: A gradual loss of strength, and discoloration of skin with chronic inflammatory in suprerenal organs (above kidney); also progressive anemia, low blood pressure, diarrhea are all usually fatal.

Death in Addison's disease is generally slow, due to aggravation of all symptoms of asthenia, which have existed; heart action gradually lessens, so that for some days before death patient may be pulseless, and a gentle death ensues. Sometimes patient remains at door of death for weeks and months, and then suddenly expires; he may die slowly; sometimes there is at the end, delirium, slight convulsions or coma.

Cancer of Uterus: At outset patient may look strong (rare); hemorrhage and other discharges, pain, loss of sleep, peculiar appearance (cancerous cachexia); blood impoverished, appetite lost, stomach and bowel functions fail; great thirst; tongue furred, then red, glazed and aphthous (white spots); patient dies exhausted. Death, however, may come from hemorrhage, convulsions, septicemia, coagula in heart from thrombosis of veins, peritonitis from extensions of cancer.

Chronic Bright's Disease: Any kidney disease with albuminuria; begins slowly; gradual failure of strength, increasing pallor or sallowness; disinclination to exertion; puffiness under eyes; swelling of ankles at night; polynuria; shortness of breath; state of kidneys make life impossible; death may be quiet, patient being ex-

hausted; about one-third die of uremic poison in forms of coma and convulsions, or diarrhoea and vomiting; about one-fifth of secondary pneumonia, pericarditis. Duration of disease is from two to three years.

Chronic Diarrhoea: Paleness, emaciation; not much pain, temper is irritable, pulse thready, creamery exudations, amasarca (much serum in tissue), coma convulsion.

Death in Mercurial Stomatitis is by asthemic erysipelas, pneumonia, pyaemia or colliquative diarrhea.

Death in Gastric Ulcer is due to perforation, hemorrhage, exhaustion and complicating diseases. Hemorrhage is often an indirect cause of death, by inducing anaemia. The causes of exhaustion are the pain, hemorrhage, dyspepsia and vomiting which are the main symptoms of the disease.

Death in Cholera Morbus shows almost uninterrupted discharges, finally involuntary; cramps are almost continuous or convulsive; pulse becomes rapidly weaker and at last is lost; coma succeeds stupor, and collapse ends in death. Fortunately, the great majority recover; the disease lasts from a few hours to two or three days.

Death in Dilation of the Stomach is usually by inanition, very rarely from rupture of the stomach.

Death in Rheumatism is most frequent in high fever alone, or in delirium or coma; rapid rise of temperature and one over 105°, especially with cerebral disturbance, indicate danger, and so does arrested perspiration during high temperature. Sometimes death is due to complications, as purulent pericarditis. Death due to rheumatism alone is comparatively rare.

Death in cerebro-spinal menengitis is mainly by asphyxia and asthenia, also necraemia (loss of blood vitality) in some very severe cases.

Death in Cholera: A most distressing condition is that of collapse from cholera; the patient may lie for hours without a pulse at the wrist and yet recover. But cases without pulse in the brachial artery, with impeded pulmonary circulation; and a dusky and livid countenance seldom or ever recover.

Collapse may last from 12 to 48 hours; the patient may die in thre or fours or live 24 or more hours, the pulse not returning, respiration gradually impeded, the brain more torpid, coma, moaning respiration, ending in death.

In imperfect reaction the comatose cases are fatal, if the kidneys fail to act.

Death in Dengue: This is a disease of extreme severity as far as it relates to the suffering of the patient; the greatest suffering appears to be in head and eyes, but the whole body is racked with pain, especially in the joints; not an inch of the body from head to foot escapes suffering. The debility can be so great, during remission, as to result in sudden death. Dengue is seldom fatal in those with average resistance.

Death in Diphtheria: The first impression of the general disease may be so profound as to make recovery impossible. The simultaneous appearance of many of the symptoms and the increase of them, as the enlargement of the lymphatic glands and of amount of exudation (in the younger and enfeebled), involving the larynx, may prove fatal. The least laryngeal quality of voice or cough, and especially of the respiration, is a dangerous sign; it may in the strongest person soon end in fatal obstruction of the glottis; hemorrhages, repeated vomiting and purging later in the attack bring on death by exhaustion.

Death in Dysintery: In the acute stage, when the stools become serous, of a brownish color; very copious, very exhausting, the abdomen becomes more swollen (tumid), but pain ceases (falsely encouraging the patient); then after a time the mind wanders, the delirium taking pleasant forms, and death comes from exhaustion without more pain.

In malignant dysintery, from the first, the patient has a cachectic aspect, countenance is sunken, listless and sodden, a burning heat in belly, great oppression and sinking; voice weak, stomach irritable, pulse frequent, small and compressible; evacuations serous and bloody, with severe pain, tenseness (straining, and intense dysinteric odor, urine scanty, scalding and fetid; shin cold and clammy; immense discharges of blood from the bowels, nostrils and mouth, ending in death.

Death in Glanders: It is usually fatal; with increasing prostration, delirium sets in, followed by coma, and ultimately death, which generally occurs about end of second week.

Death in Gout: In comparatively early life, when attacks are frequent and prolonged, when there is albumen in the urine, urine pale, specific gravity low, the outlook is toward death.

Death in Whooping Cough: From exhaustion; a serious complication is atrophy of a part of the lungs, and when considerable, the danger is great; bronchitis and broncho-pneumonia are more frequent, also lung complications. With complications in children under five years, the affection is very fatal.

Death from Nervous Shock: Victim is lying down, motionless, indifferent to surroundings, often unconscious; the skin is pale, covered with cold, clammy sweat, mucus membranes bloodless, and eyes half closed; if eyelids be raised, the pupils are seen to be dilated; sensation is extinct, respiration irregular and weak; the veins contain little blood, with bright red color; the thermometer at rectum is not higher than 36 C. Death thus ends in adynamia (loss of vital powers) and collapse. In grave cases, death occurs in from 30 minutes to 24 hours. A great joy or great fright can cause fatal shock (Sophocles, Denys and Pitt died thus).

Death in Intestinal Catarrh: As the disease advances, the emaciation increases until it becomes extreme (only skin and bone); cuticle is hard and dry, pale or brownish in color; muscular strength is so reduced, that patient cannot move from bed; the voice may become a whisper; nervous depression and moroseness become more and more marked; fever is at first at night in these last stages, then later is hectic, pulse increases, is thready, white spots appear on the inside of the mouth and pharynx; death occurs in a few weeks.

Death in Entero-Colitis: Death may occur early from a sudden aggravation of symptoms and rapid sinking, but more frequently death occurs after prolonged sickness; thus flesh is lost gradually until marked emaciation is reached; eyes and cheeks are sunken; there are bony projections of face; trunk and limbs become prominent and the skin is wrinkled from the wasting; patient looks older; the joints in contrast with wasted extremities seem enlarged, and fingers and toes lengthened; stools are less frequent, and vomiting if previously present, ceases. The pulse is feeble, quick, scarcely perceptible; respiration slow, sightless and contracted pupils; over which eyelids no longer close show death is near. Drowsiness increases and the limbs become cool, but head may be hot. The infant no longer can nurse; so slow is its vitality, that it lies pallid and almost motionless for hours or even days before death, which comes so quietly that the time of its occurrence is difficult to decide.

Death from Cancer of Stomach: Death, as a rule, is from gradual exhaustion; in extreme emaciation patient sinks into collapse, with stupor, and sometimes mild delirium. The death agony is prolonged frequently from

12 to 24 hours, and sometimes longer. Sometimes, in the last stages death may be sudden; average duration of gastric cancer is about one year.

Ovarian Cystic Disease: This tumor may grow until it fills the abdominal cavity, distends its walls, reach the thorax and cause death by interfering with nutrition and vital organs; asphyxia may be caused from pressure on heart and lungs.

Diabetes Mellitus: Death usually results from some complication, as phthisis, pneumonia, carbuncle or gangrene; sometimes shortness of breath, drowsiness, coma.

Hodgkins' Disease: Asthenia is most common form of death; anaemia progresses, patient weakens until worn out; sometimes asphyxia from pressure of enlarged glands; there may be marked emaciation.

Status Lymphaticus: Historically an enlarged thymus is associated with sudden death in children. Attacks of causeless suffocation, dyspnoea and cyanosis in infants or children are suggestive; a dull area over the manubium, and dyspnoea from throwing the head back, is a suspicious symptom. There is liability to sudden death from trivial causes; cause is unknown; thymus is enlarged; subjects usually well nourished but flabby children. Sudden death may follow injection of diphtheria antitoxin, inhalation of chloroform or ether, or trivial operations, as circumcision, or by pressure of enlarged thymus gland, usually associated with general hypertrophy of the lymphoid tissues.

In Pulmonary Tuberculosis death may be asthenia (exhaustion); the end is usually peaceful and quiet, occasionally disturbed by paroxysms of cough; consciousness is often retained until near the close; or it may be death by asphyxia, as in some cases of acute malaria or an acute pneumonic tuberculosis.

By Syncope. Not common, but may happen in advanced stages, due to fatty degeneration of heart, hemorrhage, thrombosis or embolism of pulmonary artery; also from hemorrhage with cerebral symptoms.

In tuberculosis of the periotoneum, when there is suppurative peritonitis, following perforation, death is almost certain. In consumption, pneumothorax with sudden cardiac insufficiency with collapse is the main danger.

Death in Influenza results from broncho-pneumonia usually. In the very young and aged, if debilitated especially, the danger is great. The degree of prostration is out of all proportion to the intensity of the disease. The number of people crippled, but not killed is enormous, particularly with bronchial nervous and circulatory troubles.

Death in Measles: In malignant cases the rash may become rose inclining to purple. When the "measles" sink in suddenly after they have begun to come out, and the patient is anxious and a snoring comes on, it indicates speedy death; it is the weak circulation which causes the rash to fade.

In malignant or black measles, the symptoms may be at once violent and severe; the rash is imperfectly developed; there is marked prostration, great tremulousness; twitchings of the muscles, delirium, low muttering, stupor and partial coma; lips and teeth covered with sordes (dark brown foul matter), extremities cold; urine may contain blood; death comes soon; if patient rallies convalescene is prolonged and death frequently results from diarrhea or bronchitis or other sequallae.

The Plague may be said to be a fever, usually of an adynamic type, accompanied with bulbous (swelling lymphatic glands, especially in groin) carbuncles and petechiae (small spots from effusion of blood.)

The pyrexial symptoms are like those in other forms of malignant or pernicious fever; there is lassitude, rigors, nausea, headache, and vertigo; oppression about the praecordia, anxiety and restlessness with a heavy stupid expression of countenance, and a muddy or suppressed state of the eyes. Then come hot skin and great thirst, frequent vomiting, coated tongue, fetid breath, rapid, weak and irregular pulse; prostration with perhaps tendency to syncope; with some, high excitement and delirium, with others, heaviness and stupor. The bowels are more often relaxed than constipated, and stools generally dark and very offensive; matter vomited is sometimes nearly black; urine scanty and almost suppressed in some cases; hemorrhage from mouth, stomach and bowels, and respiratory passages are frequent. The mind in some cases is clear to the last, in others the patient dies convulsed or comatose.

Death by erysipelas: A very rapid and weak pulse, with a dry brown tongue and low muttering delirium with marked prostration of strength, is an almost fatal sign; case is bad in proportion of blood poisoning over simple inflammation. Extremes of age, kidney or liver troubles point to death.

Purpura, in severe cases, often proves fatal from exhaustion, or more rarely from cerebral or pulmonary apoplexy.

In pyaemia (form of septicemia), the first important symptom is a sudden severe, prolonged rigor, followed by profuse perspiration. There are repetitions of these rigors; sallowness increases and can become well marked jaundice before death; there is often pain in the joints; and pus may form. As these symptoms advance, there is excessive perspiration, face is shrunk and pale, mind is disturbed, slight delirium and sometimes coma occur, but rarely convulsions, and in from four to ten days patient dies.

In rheumatism in its most acute form, though extremely painful, though hardly fatal (one in a thousand cases); but it may lay a foundation for serious heart disease, leading to sudden collapse.

Smallpox, when severely confluent, as from head to foot, is seldom or never recovered from, danger is greater when the eruption is very full about the head, face and neck; there is often delirium, sometimes requiring restraint; some believe they are to be murdered, showing desire to escape or to commit suicide. Delirium is a very unfavorable sign.

In malignant smallpox, once called "black smallpox," the symptoms are very severe at the outset; the blood seems poisoned, the fibrin disappearing; patient's face is sunken, breathing anxious, and sometimes death occurs before the eruption has developed. There is hemorrhage in the eruption (in many cases in the mucus surfaces from the nose, mouth and air passages; in malignant and hemorrhagic cases practically all die within the first week.

In scurvy, the liability to death is in proportion to which, such structures, as the brain, lungs and heart have suffered from serious lesions. Breathlessness is an early symptom, and becomes more confirmed as the disease progresses; the respiratory murmur is louder, and often accompanied by occasional faintings, especially where the patient sits up; such attacks are very dangerous and can be fatal. Constant and increasing oppression of the breath, frequent syncope and great anxiety indicate pulmonary trouble; these cases are most hopeless.

Typhus fever: Kills by coma or congestion of the

lungs. Pneumonia and broncho-pneumonia are frequently the direct cause of death.

In yellow fever, if the ferrety eye whitens, cheeks grow pale, lips blanched, pulse weak and compressible, and delirium is persistent with irritable stomach, the apparent remission is delusive and death is impending; patient refuses all medicine and food, lies down against his inclination, has cramps in the legs, delirium may be frantic, pulse is imperceptible at the wrist, and just when exhaustion is merging into death, final automatic discharge of black vomit closes the scene; only at this time in many cases does the lemon-chrome tint of the skin appear; in other cases in course of the disease, it spreads from the forehead downwards to the face, neck and chest, then becomes general.

In another class of cases, the pulse moderates, thirst increases, epigastric heart and pain are persistent, vomiting and hiccough irrepressible, but the mind is calm and coherent to the last. Another class of yellow fever cases tend to drowsiness early in the disease, and finally settle down into a placid state of coma, due probably to uremic poisoning.

Aneurysm of the Thoracic Aorta: Here death may occur from either rupture or direct or indirect effects of pressure. Death from rupture is not frequent; more commonly it comes from interference with respiration, or circulation, or cardiac inadequacy, or from exhaustion and cachexia.

Aortic regurgitation often ends abruptly in death, following some sudden effort as sitting up, jumping on a street car etc.; patient falls to the ground in a fatal syncope. But sudden death occurs much more frequently (Broadhent) from fibroid and fatty degeneration of the myocardium. Death may occur from gradual cardiac asthenia, or acute pulmonary oedema, where there is complete loss of compensation. While stooping over a table, a man 45 sank to the floor and exclaimed, "I am dying." His clerk asked him, if he should run for a doctor. The sufferer smiled, shook his head, and expired.

Mitral Stenosis stands next to aortic regurgitation in gravity; death results most from increase of cardiac asthenia; death may be preceded by mild delirium or consciousness may continue until the last.

In heart disease with severe cardiac symptoms on or after sixth day, usually die in a few days. Pericardial friction is usually accompanied with pericardial pain, often intense, and frequently with dyspnoea.

Aortic Sclerosis occurs especially in elderly men and shows frequency of pericardial pain, of faintness on exertion and of engina pectoris, death may be sudden, but in most cases it is due to chronic passive congestion.

Acute Pericarditis: As a result of 186 cases of death in acute pericarditis, fifty were caused by general septicemia; thirty-seven by pneumonia and pneumonocus sepsis; thirty-two by chronic nephritis; eighteen by neoplasms, seven by valvular heart disease, and nine by pericarditis alone, and the remainder by various diseases; it may be a terminal infection in chronic diseases, as cancer or nephritis.

The net total of patients with important cardiocascular lesions was 1516 out of 4,000, or 38 per cent. In these 1516 cases, though the cardio-vascular lesion was a factor in producing death, it was sometimes a minor factor.

Chronic pericarditis, when extensive and associated with mediastinitis in young rheumatic persons, produces the largest hearts known (1328, 1158, 1150 grams) and may lead to death from passive congestion. Hypertensive heart disease is most common, with decompensation.

In chronic pericarditis, if associated with chronic endocarditis, most cases produce no passive congestion; the patients (mostly elderly men) die of some non-circulatory disease.

As *hypertensive heart disease* progresses, it bothers the patient little, unless he is alarmed by what he is told about the disease (Cabot).

It may contribute to death, where there is prostration by infection, trauma, toxemia or surgical operation, (less often about one-third of cases) the heart weakens and death occurs by passive congestion; death usually occurs within a year from the first serious evidence of stasis, shown by arrhythmia, tachycardia, pulse-deficit and passive congestion. Hypertensive heart disease usually appears at about the age of fifty.

Pericarditis with effusion: septic cases are usually fatal and recovery rare in the slow insidious tuberculosis forms.

Syphilitic heart disease may be latent and harmless for fifteen or twenty years after the original infection, and usually leads to death within two years of its first clinical manifestation (Cabot). Angina pectoris before age of 46-should arouse suspicion of syphilitic heart disease.

Insanity and Death

When insanity has been slowly developed, the outlook is more unfavorable than if of sudden origin. The prognosis is almost hopeless in religious insanity based on vicarious satisfaction of unsatisfied sexual love, where nymphomania is more or less involved. Insanity associated with phthisis is unfavorable both as to recovery and life.

Certain cases of *acute mania* and *acute melancholia* end suddenly in death, due doubtless to exhaustion; if the temperature rises several degrees above the normal, the prognosis is bad, and any sign of motor paralysis or of epileptiform convulsion, is an evil omen; a long-enduring refusal of food may sometimes end fatally.

When the maniacal fury is subsiding, the prospect is poor, if the feelings are unmoved and mind calm in disorder.

A periodical recurrence of attacks of insanity with long intermissions, is an unfavorable sign, for the attacks usually become longer, the intermissions shorter; the homicidal melancholic who believes he is a victim of persecution, seldom recovers.

In mania, death may be due to exhaustion or some intercurrent disease as pleurisy or pneumonia; if maniacal exhaustion is fatal, the end may be very sudden and unexpected.

Prognosis of *mania* is generally a rising curve, then remains horizontal for some length of time, then descends, especially where life is in danger from intensity of excitement or by some complication.

In convulsions, there is a tendency to death by: (1) exhaustion due to frequency of fits; (2) asphyxia, due to sudden and prolonged fixing of the chest walls. In a child, a single attack is rarely fatal; the younger the child, the more likely is death; the more frequent and violent the seizures, the more profound the coma.

In epilepsy, continuous repetition of seizures without interval or consciousness, lasting a day or longer, often terminates in death (Rosanoff).

In Dementia Precox (catatonic), stereotythy of

words, movements or attitudes, very marked incoherence, sudden, violent and unexplained impulses (not from delusion or hallucination) indicate chronicity and incurability.

Progress in *dementia precox* is always grave, not in itself a fatal disease, but with complications as pulmonary tuberculosis, most formidable.

Melancholia ends in death in 25 per cent, due to suicide, or melancholic wasting from intense sadness, anxiety, agitation, sleeplessness and insufficient alimentation or to some complications, as pneumonia, tuberculosis, influenza.

Huntington's chorea is a chronic, slowly progressive and incurable disease, death usually occurring from intercurrent disease.

In general paralysis, at the end of the disease, disturbance of deglutition is almost constant, and may entail death suffocation. Seizures are frequent and may be fatal, and considered (by Arnaud) the natural mode of death; galloping general paralysis (excited form of disease) ends in death. In the depressive form, evolution is very rapid and death supervenes early, due to cohexia, or complication from impaired nutrition.

Another stage (Cachexia) is complete physical and mental dilapidation with fatality. General paralysis is the most fatal form of insanity.

In some cases of cerebral arteriosclerosis, the brain involves the pores and medulla, leading to death; sudden death may occur from embolism, apoplexy or exhaustion from convulsions; Kraeplin speaks of rapid development of extreme dementia with early death.

In traumatic disorders, cases of very severe injury often end in death, without return to consciousness.

Infectious delirium is caused by (in infectious diseases) elevation of temperature, congestions of nervous centers and poisoning of these centers by microbic toxins. In fatal cases the delirium gradually subsides and coma replaces the excitement.

In primary mental confusion (in psychosis of exhaustion), in unfavorable cases, death occurs from collapse, or cachexia or some complications (pneumonia, etc.). In fatal cases of hyper acute form, the patient rapidly passes into coma, and dies in a few days.

Destruction of thyroid gland causes autointoxication resulting in myxoedema and cretenism. In myxoedema without proper treatment, psychic inertia and complete dementia end in death from cachexia, or some complication.

Many insane in their last hours show a greater or less degree of reason.

Insanity resulting from brain disease, or injury of head or epilepsy, may be practically incurable; from sunstroke, the prognosis is bad. Bad symptoms are a fixed hallucinatian and good bodily health with persistent mental disorder.

Cerebral syphilis, untreated, progresses with tissue destruction and often fatal determination.

Alcoholism as fatal, is either produced from exhaustion, from protracted acute delirium, or slowly by progressive degeneration of nervous centers, or some important organ of nutrition.

In delirium tremens, death may occur from exhaustion, epileptiform attack, or some complication (pneumonia), myocarditis may be in many fatal cases the cause of death.

Senile dementia, when marked by acute attacks (complete disorientation, hallucinations), may end in death very soon.

VI—Mental Signs of Death

If the patient wants to go home or back to green fields, it is a grave sign. If patient desires constantly to be changed from bed to bed, or in absence of pain to change position in bed, it is a serious omen. This is of very serious import in heart disease, if difficulty of breathing is absent.

The face may be sealed in death with the last look of rapture or misery or anger.

In narcotic poisoning and in freezing, desire to be let alone is bad.

The moribund, except in those rare cases in which there is consciousness, is indifferent to his surroundings. Most usually consciousness is lost; sometimes it returns in the last moments, with relative quiet, after preexisting pain, called by novelists and excitable relatives (with much exaggeration) the last words of the dying, the so-called ecstacy. But such quietude is indicative of the progress of paralysis, the commencing loss of muscular tonus.

In simple palpitation fear of death results from pericardial "bumping", "thumping" and "turning over" of the heart, but the inward conviction of impending death, sometimes expected in angina pectoris, is seldom experienced.

Appearance of great mental stress is a sign; this is not known to patient. Few persons realize they are going to die.

In adults the prognosis depends much on mental symptoms. Loss of interest in formerly interesting things is a bad sign. Presentiment of fatal issue on onset of disease is bad, especially true if there is no severe pain. No interest by patient in consultation is grave sign. If a uremic patient is jolly, it is serious if not fatal sign.

(To be concluded in September issue)

The Flying Doctor

In *The Medical Journal of Australia* of November 12, 1927, an article was published in which the activities of the Australian Inland Mission were described and an outline was given of a scheme for an aerial medical service in the so-called Barkly tableland in north-west Queensland. This area is served by an admirable motor ambulance by the Queensland Ambulance Transport Brigade. The distances are very great between the centres and the Australian Inland Mission has done pioneer work in reducing the difficulties born of these enormous distances by introducing wireless communications. Arrangements have now been made with the Queensland and Northern Territory Aerial Service, otherwise known as "Qantas," to enable the Mission to supplement the means of communication by the establishment of an air service. All the preliminary work has been carried out without a hitch. The Australian Inland Mission has accepted the offer of Dr. K. St. Vincent Welch of Sydney, to undertake the organization of the aerial medical service in this tableland district for a period of twelve months. Qantas has agreed to supply a pilot and an aeroplane to be stationed at Cloncurry. It is anticipated that at least twenty-five thousand miles will be covered during the first year. Surgical and medical aid will be brought to people living as much as four hundred miles from the nearest medical practitioner. In this way a sense of security will be given to settlers who have hitherto lived under the shadow of "what might happen." Generous support has been given to the movement by the Federal Government, the Grazirs' Association and the McKay Trust. If the experiment proves a success, it is the intention of the Australian Inland Mission to cover a still wider area. The movement should prove of national value.—*The Medical Journal of Australia,* March 24, 1928.

Flu Facts

For the year 1927, the Public Health Service announced in a statement made public January 29, 36,373 cases of influenza were reported by 28 States, as against 110,494 cases reported in 1926, and 83,790 cases in 1925.

Meningitis and Endocarditis (Pneumococcic)

Report of Twenty-five Cases

HYMAN I. GOLDSTEIN, M.D.

Philadelphia, Pa.

ADJUNCT ATTENDING PHYSICIAN AND CHIEF OF THE MEDICAL DIAGNOSTIC CLINIC, MOUNT SINAI HOSPITAL, PHILADELPHIA; ASSISTANT VISITING PHYSICIAN, PHILADELPHIA GENERAL HOSPITAL; ASSISTANT VISITING PHYSICIAN AND CHIEF OF MEDICAL CLINIC, NORTHWESTERN GENERAL HOSPITAL, PHILA.,

and

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(*Continued from page* 196, *July* 1928 *issue*)

PNEUMOCOCCUS MENINGITIS AND PNEUMONIA (TYPE I)

CASE XIII.—Nannie G. Service of Dr. J. Sailer, Chief, Dr. A. A. Stevens, Chief, Medical Ward, Philadelphia General Hospital. No. K6375.

Admitted 4/14/24; died 4/16/24. Diagnosis: Lobar pneumonia; type I. Meningitis.

Female adult black, aged 49 years, born in New York.

Admission Note:

4/14/24—Patient is weak and confused. She knows her name, but forgets her address or where she is. She answers questions slowly and as if her memory were gone. Believes she took sick last Thursday, 4/10/24 (five days ago), and has had a cough since. Remembers no chill. Has had no pain in chest. Has not been sick since in Philadelphia, many years. Soft lump on right side for 13 years. Further details of history must come from relatives.

Physical Examination:

Adult negress who looks about 65 years. Breathing moderately rapid, coughing a little, also nasal dilate. She is restless and warm and keeps covered. She is markedly confused, disoriented and her memory is poor. Lips keep jerking to left. Twitching in right arm.

Head—No injury or tenderness.

Ears—No discharge or mastoid tenderness.

Eyes—Scleræ yellow. Pupils small, equal, irregular, react only a little to light. Ocular movements normal. No squint or diplopia. No ptosis. Wrinkles brow, closes eyes, and shows teeth O. K.

Mouth—Tongue protrudes in midline with tremor.

Neck—Marked pulsations of carotids.

Lungs—Dullness upper right lobe; rales throughout right lung. Fine crepitant rales, increased tactile fremitus lower right lobe with coarse crackles on inspiration and expiration. Middle and lower right lobar pneumonia with pleurisy impression. Lipoma on lower right rib.

Heart—Strong diffuse apex impulse. L. B. D. 10 cm. to left of MSL. RBD 1 cm. to right of MSL. No increase of supra-cardiac dullness. No thrill. Sounds regular and of good quality. At apex going toward sternum is a soft systolic and diastolic murmur (? rub). Pulmonic second is greater than aortic second sound and is accentuated. Blood pressure, 100/20. Visible brachial pulsation. Radials full and bounding.

Abdomen—Slightly tender over liver. Palpation impossible, because she holds herself rigidly. No dullness in flanks.

Extremities—No cyanosis, clubbing or edema.

Reflexes:

	Right	Left
Biceps	++++	++++
Triceps	++++	++++
Knee jerks	++++	++++
Achilles	++	++
Ankle clonus	+	+
Patellar		unsustained
Babinski	0	0
Kernig	+	+

Neck is somewhat stiff.

Impression—Lobar pneumonia; pneumococcic meningitis.

4/14/24—Spinal fluid turbid and under great pressure.

4/15/24—Dying. Cheyne-strokes respiration. Comatose. Fine rales on inspiration and expiration. Breath sounds diminished. Seems as if a new pneumonic process is starting in right upper lobe and the older process is subsided. Left chest is clear. Heart has double blow at apex. Not enlarged. Neck stiff. Brudzinski +. Arm and leg Kernig +. Bilateral ankle clonus. Babinski negative. Abortive patellar clonus.

Impression—Meningitis, pneumococcic.

4/16/24—*Final Note:*

Patient died this A. M. Culture of spinal fluid not back. Pneumococci found in smear. Spinal fluid cell count, 500, all polys.

Diagnosis—Cerebrospinal meningitis, pneumococcic; Lobar pneumonia.

Laboratory Record:

Blood—

4/14/24—Wassermann negative in both antigens. Count—lymphos 86. Chemistry—blood sugar 151; urea 39; uric acid 4.4 creatinin 9.

Spinal Fluid—

4/15/24—Cell count—endoth. 14; faint trace globulin. 500 per cumm. probably more, much degenerated. Polys 97, R. B. C., few.

Smear—a gram + lancet shaped diplococci morphologically *pneumococci.*

Autopsy No. 8742, performed 20 hours after death by Dr. Hartmann.

Clinical Diagnosis—Lobar pneumonia—type I, meningitis.

Bacteriological Diagnosis—Heart blood: pneumococcus—type I. B. Coli communis.

Gross Anatomical Diagnosis:

Chronic adhesive pleurisy.

Heart—Ac, ulcerative vegetative valvulitis (aortic valve), with perforation into the interventricular septum; cloudy swelling and coronary sclerosis.

Aorta—Moderate atheroma.

Lungs—Chr. interstitial pneumonitis and congestion (left); lobar pneumonia—early grey stage, and fibrous pneumonia lower lobes (right).

Spleen—Congestion; superimposed old chr. interstitial splenitis.

Kidneys—Subacute parenchymatous nephritis.

Liver—Portal cirrhosis; cloudy swelling superimposed.

Brain (Tentative)—Purulent meningitis; marked edema; thickened and milky pia arachnoid; anatomical anomalies of the cortex; slight arterio-sclerosis.

Histological Diagnosis:

Heart—Cloudy swelling. Brown atrophy. Arterio-sclerosis (early). Fatty degeneration. Chr. epicarditis.

Aortic Valve—Acute suppurative and vegetative endocarditis.

Lobar Pneumonia (early gray stage); multiple abscesses. Ac. fibrinous pleurisy (R. lung) bronchopneumonia. Ac. fibrinous pleurisy L. lung.

Spleen—Hyperplasia. Congestion.

Kidney—Cloudy swelling.

Liver—Cloudy swelling.

Brain—Acute meningo-encephalitis; multiple cortical abscesses.

Cause of Death—Lobar pneumonia, type I; acute pneumococcic meningitis.

Internal Examination:

Peritoneum and Pericardial sac grossly negative.

Left pleural cavity grossly negative.

Right pleural cavity entirely obliterated by dense, firm fibrous adhesions.

Heart—Weighs 400 gm., measures 13 by 9.5 by 7 cm. Epicardium shows no gross changes. Coronary vessels are tortuous and sclerosed. Myocardium cuts with normal resistance, pale red in color, somewhat flabby. Endocardium—on the right side of the heart at the base of the tricuspid valve and over the inerventricular septum is an area of acute vegetative endocarditis, about 1½ cm. in diameter. This lesion is a direct extension from an acute ulcerative and vegetative valvulitis of one of the aortic leaflets. Mitral valve shows no gross lesions. Aortic valve shows upon its middle leaflet or that leaflet over the interventricular septum a large vegetation measuring 2½ cm. in diameter, reddish white in color and very friable. It has ulcerated through the valve leaflet and extended through the base of the valve leaflet through the interventricular septum into the right side of the heart. Pulmonary valve shows no gross lesions.

Aorta—Shows moderate degree of atheroma.

Left Lung—Weighs 355 gm. Its pleural surface is smooth and glistening. Lung crepitates throughout. Its cut surface shows marked fibrosis and congestion.

Right Lung—Weighs 645 gm. Pleural surface is greatly thickened, with old dense fibrous adhesions in places, with recent fibrinous exudate. Upper lobe is the seat of lobar pneumonia in grey stage. Lower and middle lobes show marked fibrosis.

Left Kidney—Weighs 165 gm., measures 1 w. by 5 by 4 cm. Organ is somewhat flabby. It cuts with slightly increased resistance. Capsule strips with difficulty tearing portions of the kidney substance. Cut surface is pale red in color, with a slight yellowish tinge. Vessels are moderately sclerosed.

Right Kidney—Weighs 150 gm. measures 28 by 21 by 9 cm. Organ is somewhat flabby. Edge is slightly rounded. Organ cuts with slightly increased resistance. Cut surface is very granular and shows congestion and portal cirrhosis.

Brain Removed—Weighs 1,255 gm.

PNEUMOCOCCUS (II OR IV) MENINGITIS

CASE XIV.—Howard H.

Service of Dr. J. Sailer, Chief, Medical Ward, Philadelphia General Hospital, No. K4143; Dr. A. A. Stevens, Chief.

Admitted 11/9/23, died 11/10/23. Diagnosis: Pneumococcic meningitis, type II or IV.

History given by wife.

Male adult, white, aged 31 years, married, born in Philadelphia.

Chief Complaint—Pain in left side of chest, headache, watering of right eye, chills, fever, sweats, vomiting and pain in eyes.

History Present Illness—Onset one month ago with: Headache which at first was frontal. This headache became quite generalized in a few days and was accompanied by marked ringing and buzzing in the ears. The headache became progressively worse keeping patient awake at night, in agony. This headache became steadily worse until yesterday when patient lapsed into semimental apathy. Pain in left side of chest began two weeks ago. This pain was accentuated by inspiration. It disappeared in three days' time. Family doctor gave patient three pills for this pain and relatives attribute relief to these. Watering of right eye accompanied by palpebral twitchings for one month. This symptom did not respond to treatment and became progressively worse. Pain in eye for one month. Patient was receiving treatment from his doctor but pain in his eye became progressively worse. Fever, sweats, chills for the last two weeks. Patient first noticed that he was unable to keep warm while at work, even with an overcoat on. The chills and sweats have been becoming more frequent. They occur both day and night. Vomiting began yesterday 11/9/23. Vomitus was dark in color resembling blood. The vomiting was projectile in character. Every time patient took medicine, water, etc. he would vomit. He had a number of vomiting spells which had no relation to taking of food or drink. No nausea.

Past History—Denies diseases of childhood. Amputation of finger three years ago. Infected foot one year ago. Patient subject to tonsillitis. Influenza five years ago. No history of gonorrhea or lues. By systems:

Gastro-intestinal—Patient has always been constipated. Pain in upper abdomen after eating each meal. Occasionally patient would have morning vomiting spells.

Past History:

Respiratory—Cough every Summer with considerable expectoration for fifteen years. Patient had night sweats for last ten years. No dyspnoea.

Nervous—No evidence of palsies, tremors, etc.

Heart and Vessels—No palpatation, dyspnoea., etc.

Genito-urinary—Apparently negative. Denies lues or gonorrhea.

Bones and Joints—Left elbow fractured six years ago.

Special Sense—Negative.

Social History—Married eight years. Wife has four healthy children. Steel worker by occupation. Moderate drinker. Heavy smoker. No marital difficulties.

Family History—No family history of carcinoma, lues, tuberculosis, or insanity.

Physical Examination—Well developed, well nourished adult white male of 31 years. Muscles negative. Good size and tone. Skin, essentially negative except for fever. Skeleton negative. Head roughly negative.

Essential Findings—11 P. M. 11/9/23: Rather stuporous and dull, but when aroused replies rationally. Very severe fronto-occipital headache, also feels pain in eyes. Eyes closed most of time as it relieves pain slightly. Pupils right larger than left. Reaction to light and accommodation good. No extraocular signs. No muscular stiffness or other positive findings.

5 A. M. 11/10/23: Delirious, restraint necessary.

8.30 A. M. Delirious, patient irrational, hallucinated, noisy, muttering picking at blankets. Marked psychomotor activity and restlessness. Difficult to restrain.

Muscles of neck markedly stiffened. Brudzinski's sign. Kernig sign marked. Reflexes decreased generally. Babinski ++ on right, less marked on left side. Pulse rapid (100) and rather shallow.

11/10/23—8.30 A. M.—Lumbar puncture: Fluid under pressure. Very cloudy, looks purulent. Fluid clots easily after standing few minutes, that is white masses settle out.

Spinal fluid—Globulin ++; sugar +. Cells of fluid 2000 leucocytes. 95% polymorphonuclears. Gram + diplococcus as numerous as leucocytes.

Bacteriology of spinal fluid—Polymorphonuclear cells numerous, short chains of gram + cocci, most probably pneumococci (possibility of streptococci).

Blood count—20,900. 95% polys.

Blood culture and spinal fluid culture—Pneumococci Type II or IV. Wassermann and colloidal gold requested. (No report).

Temperature elevated 102. Mouth very dry, thick mucous. Congestion and dryness of pharynx. Teeth sordes.

Chest—Negative. Lungs essentially negative except for slight roughness of sounds and occasional rales in lower part of left chest anteriorly. Heart rate rapid and a little weak.

Abdomen—Negative. Plaster on left side just below ribs.

Diagnosis—Pneumococcic meningitis, (cerebrospinal).

11/10/23—Seen by Dr. Doane. 10 A. M.

Signs same as at 8 A. M.

Diagnosis as above. Dr. Doane advises transfer to bridge and mercurochrome treatment.

Dr. A. A. Stevens. 11.30 A. M.

Diagnosis as above. Advises use of mercurochrome and a daily spinal drainage.

2.30 P. M.—Mercurochrome solution 1%—solution prepared two days ago. 25 cc. intravenous. 30 sec. for injection.

2.45 P. M.—Spinal puncture. Fluid bright green and opalescent.

3 P. M.—Not so noisy. Condition poor.

5 P. M.—Growing weaker.

Final Note—Patient died today at 9.05 P. M.

No autopsy performed. No other laboratory notes recorded.

PNEUMOCOCCUS (IV) MENINGITIS AND ACUTE VEGETATIVE ENDOCARDITIS OF TRICUSPID VALVE

CASE XV.—Alice M.

Service of Dr. David Riesman, Chief, Medical Ward, Philadelphia General Hospital. L5469.

Admitted 4/28/26; died 5/8/26; Diagnosis: Pneumococcic meningitis.

White adult female aged 37 years; born in Spain.

Chief Complaint—Pain in chest.

History Present Illness—Onset six months ago with acute pain in the chest. Was in bed with "pleurisy" for two weeks. Then got up and returned to work for five months. Two weeks ago while waiting on table in a hotel she had a sudden sharp pain in her right chest, which she felt with almost every breath. Three weeks ago she coughed up material which looked like prune juice. She had also noticed this six months ago. She has gradually become worse during the past two weeks and finally came here. Her "jaw bone" has hurt for the past four days when she opens her mouth. Says she has been delirious at times for over a week. Thought she had lock jaw. Has no strength. Feels worse in evening and at 4 A. M. Has been perspiring freely during past week. Has lost considerable weight, estimated between 20 and 30 pounds during past six months. Spits up little white material mornings. Anorexia past two weeks. No B. M. since yesterday.

G. U.; Cardio-renal; C. N. S.—negative.

Past Medical History—Operated one year after marriage. "Tumor on ovary". Malaria in S. C. when a child. Otherwise negative.

Family History—Negative. No T.B., carcinoma, nervous or mental disease.

Social History—Married. One child living and one child dead ("Flu"). No miscarriages or stillbirths. Has "white" vaginal discharge. Menses 12—28/ 3-6. Moderate flow. No pain or spotting. Last period one week ago. Does not use alcohol, drugs or tobacco. Drinks 3 cups tea and 3 cups of coffee daily.

Physical Examination—A white female 38 years old in very poor state of nutrition. Body conforms to sex. Patient is obviously ill, suggesting more a chronic illness than acute. There is some respiratory distress. Patient states she is unable to take a deep breath because of a sharp pain in her lower right chest. There are occasional expiratory grunts or more nearly groans. T. 100; P. 130; R. 38.

Head—Rather marked emaciation. Scalp, skull and mastoids negative.

Ears and Nose—Negative.

Jaw—Patient is unable, she says to open her jaws and has been that way for the past two weeks. Thought she had lock-jaw. Upper teeth absent. Unable to visualize lower set or pharynx. Tongue negative.

Eyes—Pupils sluggish and do not retain contraction. Accommodate for a distance. Fundi are negative.

Neck—No rigidity. Anterior vervicals palpable bilaterally. Small hard thyroid.

Chest, Heart—Apex 5th interspace M. C. L. Rate 140. No murmurs, thrills or arrhythmia. No demonstrable enlargement. Pulmonic second sound greater than aortic second sound.

Lungs—Limitation of movement over right side. Impaired resonance with flatness at base, decreased tactile fremitus and vocal fremitus almost absent breath sounds, over lower right chest. Questionable transient crepitant rales over right apical lobe.

Abdomen—Gurgling on auscultation and palpation. Increased peristalsis, lower mid line scar above symphysis. Liver and spleen not palpable.

Extremities—No deformities, though knee joints are irregularly enlarged. Knee jerks bilateral—negative, Babinski, Gordon, Oppenheim, Brudzinski, Kernig. No clonus (ankle).

Impression—Pleural effusion lower right chest. Origin tuberculosis. (?) Lues?

4/29/26—Patient somewhat relieved since admission. Blood chemistry and Wassermann, count ordered. 2.30 P. M.—Two attempts at thoracentesis made. No fluid obtained.

4/30/26—Patient's temperature rose one and one-half hours after pleural puncture to 104. Then gradually dropped, through night and morning to 100, its original height. X-Ray taken this A. M. This is a difficult case. My present view is loculated empyema or some other focus of infection. Stat blood culture ordered. Patient seen by Dr. Clark who makes diagnosis of sepsis (focus?). Patient's mental condition has appeared disturbed ever since admission, while oriented and fairly cooperative she has shown increased psychomotor activity, considerable distractibility some incoherence and her story has been not wholly consistent. Urine report is negative, essentially. Blood count r. b. c. 3,500,000; Hgb, 11,4 gms. w. b. c. 17,200. Polys 86, lymphos 14.

4/30/26—This suggests an acute infection entirely in keeping with the clinical picture. The focus is yet undiscovered. X-Ray shows haziness over upper right

lobe in the infraclavicular region at this area. Few suspicious shadows at left apex.

5/6/26—7 P. M. Patient is stupporous, moans considerably. There is rigidity of the neck and a positive Kernig, suggestion of a Babinski on left. Knee jerks active. No Brudzinski. No McEwen's. Blood Wassermann repeated. Stat analysis—stat chemistry returned shows sugar and urea normal. Blood count W. B. C. 13,200, polys 78, lymphos 13, monos 8, essen. 1. Eye grounds examined—choke disc in right eye, haziness in left. Spinal fluid—marked turbidity, slightly under pressure.

Vaginal Examination—Ironed out condition of mucous membrane. *Uterus*—retroflexed, smooth even and normal size and consistency.

Otologic Examination—Shows no bulging of ear drum, no redness or discharge.

5/6/26—*Notes by Dr. Riesman*—The patient is in a stupor and unable to give account of herself. Has a sallow complexion, moans constantly. Has fever. Heart is rapid rhythmic, there is no definite murmur. On right side the resonance is good, on left resonance is somewhat impaired in axillary region. Posteriorly percussion note is peculiar inside of left scapula, not dull but rather tympanitic. There are few rales throughout lungs, not in area above. No consolidation. No bronchial breathing. Only area of dullness and diminished breath sounds are in left hypochondriac region. She is very tender over right ear, but there is no discharge and no swelling. There is an absence of cyanosis. Liver enlarged. Abdomen little distended. There is suprapubic scar in which a projecting mass can be felt which is an epiplocele. Patient holds legs flexed. No Kernig. Right foot is webbed. No rigidity of neck.

Diagnosis—Septicemia of unknown origin.

5/7/26—9 A. M.—Rigidity of neck. No Kernig. No Brudzinski nor McEwen, no Babinski. Marked rigidity of extremities. Motion ceases, much groaning. Gentian-violet 1 per cent solutions—28 cc given intravenously. Patient has developed a systolic murmur at apex with occasional extra-systole and a split second sound. No pulse deficit. Rate accentuated. 11 A. M.—Only signs present are rigidity of neck and twitching of hands and arms. 3 P. M.—Dr. Pontius made eye ground examination—choke disc in right eye. Left eye negative. *Spinal fluid*—no sugar, no organism, 100 per cent polys. 1,700 cells per cm.

5/7/26—7 P. M.—No neurological signs other than rigidity of neck and tache cerebrale.

5/8:26—9 A. M.—Patient unconscious, gaze is fixed. Respiration is rapid, noisy and stertorous. Marked rigidity of neck. Tache cerebrale present. McEwen sign present. Blood pressure imperceptible. No other neurological findings.

Final Note—9.50 A. M.—Patient succumbed. Everything possible had been done for this patient. It was extremely interesting and mysterious because of the variety of findings and history of previous illness.

Diagnosis—Pneumococcic meningitis. Auricular extra systole. Neuroretinitis. Lues.

Consultation—Examination by Dr. McLean—5/7/26. Patient too ill for thorough examination. Can find no evidence of tuberculosis of lungs.

Consultation—Dr. O'Brien—5/7/26. O. D. Media clear, disc oval axis 90. Small central physiological cup seen through a haze. Edges are blurred. No hemorrhages. Veins are over distended. Low grade neuroretinitis. O. S. Negative.

X-Ray report 4/30/26, Plate No. 32360—There is some haziness over the upper right lobe, in the infraclavicular region at the base of this lobe. There are a few suspicious shadows at the left apex. Pulmonary tuberculosis.

Laboratory Record:

4/30/26—*Urine*—Yellow, alk. 1010 no alb. No sugar. Polys. 4; mucus + many epithelial cells. 5/6/26—Yellow, acid, 1010, no sugar, no alb., many epithelial cells.

4/30/26—*Blood*—R. B. C. 3,500,000 W. B. C. 17,200, Hgb. 11.4 gms. Polys 86, lymphos 14. 5/6/26—W. B. C. 13,100, polys 78, lymphos 8, cos. 1. 5/7/26—R. B. C. occasional. Spinal fluid 100 per cent polys. 1700 cells per cm. Trace of globulin. Sugar: did not reduce solution.

4/30/26—*Blood culture — pneumococcus group IV.* Blood Wassermann—Negative both antigens.

4/29/26—*Blood chemistry*—Sugar 98, urea 14, uric acid 4. 5/6/26—Sugar 111, urea 17. 4/30/26—Sputum negative for T. B.

Autopsy No. 17201 performed within 24 hours after death by Dr. Belk.

Clinical Diagnosis—Pneumococcic meningitis.

Bacteriological Diagnosis—Heart blood—no report.

Gross Anatomical Diagnosis:

Decubitus—Early.

Heart—Ac. vegetative endocarditis—tricuspid valve.

Lungs—Subacute adhesive pleurisy; encapsulated empyemia; resolving pneumonia both apices; recent broncho-pneumonia both bases; abscess formation.

Spleen—Follicular splenitis.

Kidneys—Acute tubular nephritis.

Liver—Congestion; cloudy swelling; fatty infiltration.

Adrenals—Congestion.

Uterus—Multiple fibroids.

Brain—Subdural purulent exudate; Subarachnoidal exudate most marked on convex surface; cortical atrophy, moderate with moderate superimposed edema; pallor of brain; very slight ventricular dilatation.

Histological Diagnosis:

Lungs—Bronchopneumonia; abscess (right lower lobe). Resolving pneumonia; (lobar) atelectasis, partial.

Spleen—Acute diffuse splenitis.

Kidneys—Cloudy swelling.

Liver—Congestion; cloudy swelling.

Adrenals—Cloudy swelling.

Brain—Acute pyogenic meningitis.

Cause of Death—Acute purulent meningitis.

Internal Examination—There are fairly dense, though not extremely old pleural adhesions over the middle lobe of the right lung and the lower part of the upper lobe. These are situated about the nipple. The left pleural cavity posteriorly over the upper lobe shows more dense adhesions than at first appears. An abscess cavity contained within the pleura about the size of a walnut is found; this contains pus.

Heart—Weighs 300 gms. It is about normal in size and of normal consistency. On section—musculature is normal color. The cavities are normal. Arteries are not to be palpated. Valves are normal with exception of the tricuspid; the posterior leaf of the tricuspid contains a vegetation about 2½ by 2½ cm in diameter, smooth on the surface, though roughly lobulated, with a faint greenish color. The anterior leaflet contains a much smaller vegetation, which however, conforms accurately to the long diameter of the valve covering the edge, therefore measuring about 1 cm by 5 cm. (Smears made from the larger vegetation to be stained for bacteria). There is in addition a very little dilatation of the right auricle.

Right Lung—Weighs 680 gm. Pleural adhesions as noted. Also there are more dense adhesions at the base

of the right lower lobe near the diaphragm. On section the upper and the middle lobes are tough, grey, watery, with very little blood. Lung crepitates in a diminished manner and section floats in water. The appearance suggests that this part of the lung had been the site of a lobar pneumonia, which at present is undergoing some stage of resolution. The lower lobe is heavy, and on section red in color, exudes a large amount of blood, and shows diminished crepitation throughout. Here and their are firmer, slightly elevated, greyish granular patches of broncho pneumonia. Very near the base a more solid mass, on section, shows itself to be fairly well defined, ragged, irregular abscess, and possibly several small abscesses in close proximity. The appearance however, is that of a pyogenic lesion rather than tuberculous.

Left Lung—Weighs 550 gm. It is similar to fellow, except that in the upper lobe very small, apparent abscesses of about 1 to 3 or 4 mm. in diameter are seen. These apparently did not contain any exudate, and were continuous with the rest of the lung. There was no defining membrane. In reality they look like dilated air spaces which they may represent.

Spleen—Weighs 190 gm. It is moderately enlarged. Capsule is smooth. On cut section the follicles are very prominent, the pulp is slightly friable and scrapes off rather easily.

Kidneys—Left weighs 220 gm., right 200 gm. They are slightly enlarged, very pale in color. Capsule strips without any difficulty showing some fetal lobulations. On cut section cortex and medulla are nicely differentiated. There is no increase in the pelvic fat. Cut section is extremely pale, with this pallor there are irregular areas of congestion. The renal arteries show no arteriosclerosis.

Liver—Weighs 1980 gm. It is appreciably enlarged and soft. On section it exudes a considerable amount of blood. When this is removed a yellow appearance is noted. On close inspection the fat is arranged in the form of small circles surrounding a rather pale liver tissue.

Aorta—Shows a very slight degree of atheroma—senile type.

Gross Description—(Dr. Winkelman.)

Brain—Weighs 1330 gm. Specimen of normal size. It is symmetrical in form. Normal throughout in consistency and pale in color. The feature of the case is the condition of the pia arachnoid. When the brain was removed from the skull a considerable amount of greenish yellow cerebrospinal fluid of a thickened consistency remained in the skull cavity. Over the anterior inferior cerebellar margins there was a collection of thick greenish yellow exudate. After the brain was washed this had disappeared. After washing the following was noted: Over the convex cerebral surface the pia arachnoid was moderately thickened and moderately frosted. Along the medial border of this hemisphere close to the line of dural attachment there was seen a sub arachnoidal collection of yellowish green material which resembled a purulent exudate and there was a mild thickening of the pia arachnoid in the interpeduncular space, which resembled that due to a chronic mild inflammatory process. No exudate was evident elsewhere. The cerebral hemispheres present a moderate cortical atrophy and similar amount of superimposed edema. This edema causes rounding of the convolutions and not flattening. The vessels are small, thin walled, collapsed and are pink in color. The dura does not present any abnormalities. The pons, cerebellum and medulla externally are grossly normal. On section the brain in vertical planes from front to rear the following is noted: No abnormalities beyond a very slight ventricular dilatation. The pallor of the brain is more marked on section.

Gross Diagnosis—Subdural purulent exudate. Subarachnoidal exudate, most marked on convex surface. Cortical atrophy, moderate with moderate superimposed edema. Pallor of brain. Very slight ventricular dilatation.

Microscopic Descriptions—(Dr. Winkelman). Pia arachnoid; Contains many polynuclears leucocytes, especialy in fissures and especially about base of brain.

Cortex—Architecture preserved. Ganglion cells have lost their nissl substance.

Blood Vessels—Shows no abnormalities except marked congestion and occasional perivacular infiltration in the upper cortical layers.

Microscopic Diagnosis—Acute pyogenic meningitis.

PNEUMOCOCCUS (TYPE III) MENINGITIS

CASE XVI—Herman H. Service of Dr. G. M. Piersol, Chief of Medical Ward, Philadelphia General Hospital. Dr. R. J. Hunter, Chief, Laryngeal Ward. Admitted 1/6/27 to Medical Ward, transferred 1/6/27, to Laryngeal. Died 1/9/27.

Diagnosis — Pneumococcic meningitis. Bilateral chronic mastoiditis. Broncho-pneumonia.

White male adult aged 60 years.

1/6/27—Patient brought in by Police. Does not speak, comatose, unable to obtain history.

Physical Examination:

General Appearance—A poorly developed white man, lies in bed, unconscious and very spastic in upper extremity. Neck is very rigid. Both ears are draining a thick pus. Lower extremity slightly spastic. Marked lateral nystagmus.

Head—Normal contour, scalp clean, no scars.

Eyes—No ptosis or discharge, pupils are equal but irregular. Left pupil is fixed for light, right one responds very sluggishly. Marked lateral nystagmus, both eyes.

Nose—Septum slightly deviated to the left. No discharge or obstruction.

Ears—Both ears are draining. The discharge is a thick yellow pus. No mastoid swelling, or apparent tenderness.

Mouth—Lips pale, no herpes. Tongue clear. No tremor, teeth absent.

Neck—Exaggerate pulsations of vessels of the neck. No adenopathy or scars. Marked rigidity.

Chest—A good examination is impossible due to lack of cooperation, and constant motion of patient. Chest is well developed.

Lungs—Expansion good, poor resonance throughout. Breath sounds harsh, crackling rales heard over both bases and a few at the apex.

Heart—Sounds of fairly good quality, boundaries could not be determined due to resistance of patient, systolic murmur heard at the left border of the sternum, transmitted downward.

Abdomen—Liver slightly enlarged. No other masses palpable.

Extremities—Both arms are flexed and very spastic. Legs are extended but also slightly spastic. The right arm and leg are more spastic than the left. Bilateral Kernig's sign, suggestion of Babinski. No ankle clonus.

Impressions—Bilateral otitis media. Pneumococcic meningitis. Chronic bronchitis. Endocarditis.

1/6/27—Patient examined by Dr. Hunter. Transferred to Laryngeal for bilateral mastoidectomy. Blood Wassermann, spinal Wassermann, colloidal gold and spinal sugar have been taken, reports not yet back. Diagnosis as above.

1/6/27—*Preoperative Note*—Patient is a poor risk for any anesthesia. *Heart*—aortic murmur. *Blood*—pressure 140/80. *Lungs*—rales throughout. No pneu-

monic consolidation. *Urine*—incontinent. *Anaesthesia*—novacain. *Procedure*—Bilateral mastoidectomy and cerebrospinal drainage and irrigation.

1/6/27—Operation. Stat by Dr. Hunter under very light nitrous oxide, and oxygen anesthesia. An incision was made over the left mastoid region. The superficial cells when exposed showes granulation of tissue. The deep cells contain pus; tympanic membrane exposed, stapes and other bones removed. Gauze drainage and packing in ear. Incision closed with three silk worm sutures. Operating time 45 minutes. By a similar incision, right mastoid cells were found, relatively normal. Simple mastoid done. Closed with three sutures. Operating time 15 minutes. At a point 1¼ inches above and 1¼ inches to the right of external occipital protuberance trephine opening and canula inserted into lateral horn of right ventricle. Cisterna puncture—washed with 100 cc of saline from above down. Patient returned in good condition under circumstances.

1/7/27—Patient rational this A. M. Mentally clear. Says that he cannot hear in the ear of the radical mastoid. Has been having ear trouble for the past six months. 5 P. M.—Lower cord washed through lumbar puncture with 140 cc of normal saline which was injected and withdrawn, washings became less cloudy.

1/8/27—Lungs show evidence of pulmonary edema. Patient drowsy, mentally confused and much worse.

1/8/27—Seen by Dr. Hunter who with the patient lying in bed inserted ventricular canula through trephine opening and allowed fluid to drain through cisterna needle. The ventricular canula although within ventricles would clog and drainage was unsatisfactory. Spinal puncture then done and cord washed from cisterna downward. 30 cc of one-half per cent formalin in normal saline was then injected and needles withdrawn. Half hour later patient in shock. Rallied under treatment.

1/9/27—Pulmonary edema increased and heart failed. Death at 10:45.

Diagnosis—Pneumococcic meningitis; Bilateral mastoiditis; Bilateral otitis media; Endocarditis? Bronchopneumonia. Pulmonary edema. P. O. Mastoid and trephine.

Additional History—Ear trouble for the past six months. Wassermann May 1926 ++++. Carcinoma of prostate removed, could not take arsenic so was receiving bromide. History from Dr. Hunter.

Laboratory Record:

Blood—1/6/27—W. B. C. 18,000, polys 96, lymphos 3, L. & Trans. 1. 1/7/27—Sugar 150, blood urea 15.

Spinal Fluid—1/6/27—Cell count 3,550 per cmm, globulin heavy trace, polys 100 per cent. 1/7/27—Cell count 1,242 per cmm, globulin heavy trace, gram, positive. Micrococcus (morphocogically strep.)? 1/6/27—Smear—small gram pos. micrococci. 1/8/27—*Pneumococcus type III.*

Smear from ears—1/6/27—Gram positive diplococci.

Autopsy No. 17,850, performed within 48 hours after death by Dr. B. Gouley.

Clinical Diagnosis—Pneumococcic meningitis. Bilateral mastoiditis. Bronchopneumonia.

Bacteriological Diagnosis—No report made.

Gross Anatomical Diagnosis—Bilateral otitis media and mastoiditis. Bilateral mastoid operation. Meningitis, secondary.

Aorta—Atherosclerosis. Luetic aortitis.
Heart—Hypertrophy.
Lungs—Pulmonary congestion and edema.
Spleen—Congestion. Follicular hyperplasia.
Kidneys—Chr. diffuse nephritis.
Liver—Passive congestion.
Brain—Meningitis, purulent type; Arterosclerosis, severe; Edema, brain moderate, severe. Softening, thrombotic, right basal ganglia. Hemorrhage, cortical, right occipital lobe. Cyst of choroid plexus bilateral.

Histological Diagnosis:

Aorta—Syphilitic aortitis. Atheroma.
Heart—Ac. parenchymatous degeneration.
Lungs—Congestion, edema.
Spleen—Arteriosclerosis. Congestion.
Kidneys—Arteriosclerosis. Chr. diffuse nephritis.
Liver—Passive congestion. Fatty degeneration.
Cause of Death—Purulent meningitis.

Internal Examination—The peritoneal cavity shows no pathology. The abdominal organs occupy their usual position. There is no fluid in the pleural sacs or any excess in the pericardium.

Heart—Weighs 570 gms. It is enlarged and firm; there is no pericardial pathology. The left ventricle muscle measures 21 mm in width. It is fleshy, of good color and firm. The mitral and aortic valves show nothing unusual. The right side of the heart, both auricle and centricle, is dilated and filled with clots. The right ventricular muscle measures 6 mm. The valves are normal. The root of the aorta is markedly sclerotic and atheromatous showing many ulcers involving the orifice of the right coronary artery closing its lumen partially. There is also distinct evidence of syphilitic aortitis with the aheromatous lesions by far the most prominent. Both these changes are seen down along the thoracic aorta. The left coronary artery is patulous throughout. The right coronary artery shows a calcareous infiltration of its walls with diminution of the lumen for a distance of about 3 cm. Beyond that point the artery is normal.

Lungs—The left lung weighs 720 gms. It is a large organ showing no consolidation. On section, one notes a terminal congestion and edema. The right lung weighs 720 gms. and resembles the left.

Spleen—Weighs 250 gms. It is large and soft. On section, the surface is quite congested and the follicles stand out fairly prominently.

Kidneys—The left kidney weighs 220 gms. It is enlarged and rather firm. The capsule strips with some resistance leaving a finely granular surface studded with cysts here and there. On section, the cortex and medulla are very poorly differentiated. There are many cystic areas extending down through the cortex filled with a pale brown, dirty fluid. Some of the glomeruli can be seen as fine red points indicative of congestion. The ureters show fairly thickened walls and there is a moderate increase of pelvic fat but this cannot account altogether for the general chronic disease. The right kidney weighs 250 gms. and resembles the left.

Liver—Weighs 2000 gms. It is enlarged, fairly soft, brownish red in color with a rounded border. On section, one notes a nutmeg congestion.

Note —+ Inspection of the skull case shows a marked suppurative destruction of both petrous bones. Necrosis has reached the point where it is impossible to say whether the suppuration came direct through the mastoid roof and walls or whether the paraneural infiltration came up along the sheath of the auditory nerve. The dura has been bared on both sides. It was not incised by the operation. There is a general suppurative meningitis along the base of the brain extending from both operative fields. Inspection shows where the dura was punctured during ventricular puncture. No inflammatory process has started at this point.

Gross Description—(Dr. Winkleman).

Brain—Weighs 1360 gms. The feature of the case

(Continued on page 227)

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Physicians as Compensation Referees and Legislators

Professor Lindsay Rogers, Moreland Act Commissioner to investigate the State Labor Department, suggests in his report that some physicians be named as referees to deal with Workmen's Compensation cases. This, it seems to us, would go far toward humanizing the Bureau, not to speak of other considerations. There are no reasons sustaining the appointment of lawyers as referees that can not be matched with equally cogent reasons as to why physicians should likewise serve. Physicians not only have something precious to contribute to such a field of activity, they have besides the duty to broaden their own civic culture in such a way as one witnesses on the part of the medical profession in a highly civilized nation like France. Both medicine and the state would profit if more able physicians discharged their civic duties *fully*. In this issue we publish an article by Doctor William Lathrop Love, the Senator representing the Eighth District of Kings County, which is of special interest in connection with the foregoing remarks.

Noguchi Passes

The death of Noguchi removes a great investigator who symbolized, above all things else, the international character of science.

What a range of contributions! He left our knowledge greatly advanced in a field of research which included yellow fever (source of his own martyrdom), syphilis, trachoma, poliomyelitis, rabies and Weil's disease.

He nobly met Dr. Benjamin Rush's test of a successful life in medicine—the degree to which one leaves it better than one found it.

To the antivivisectionists who sought his ruination the man's final martyrdom is doubtless meaningless, his intelligence and his humaneness incomprehensible. To their warped minds he who sought to prevent blindness, hydrophobia and the crippling of children was a monster.

What vaccine will ever restore vision to *these* sick ones? What serum will ever rationalize *these* feeble minds?

Personality and Progress in Medicine

The Baltimore savant, Dr. Hemmeter, has said that medical history is essentially the evolution of great constructive ideas. It is the cultural forces motivated by ideas that thrust up new leaders from time to time. It is the genius who fathers the ideas. The so-called leader is not necessarily a genius himself; he is, or ought to be, one who applies ideas that are worth while.

"All ideas that have a meaning are realities and can induce action, if not inhibited. They represent potential forces that can pass into action, whether they be connected with consciousness or not. It must be intelligible then, that ideas can become historic factors" (Hemmeter).

In general, cultural collectivism and individualism are complementary. The great thinkers produce what we know as medicine, but their ideas "must be strongly represented in the [cultural] environment in order to become firmly located in them" (Paul Barth). The relationship is reciprocal. "The great man of general history is a mystery if he is studied as an isolated individual" (Hemmeter). Nevertheless the true genius possesses as unique a make-up as the paranoiac, through which he fulfills his peculiar destiny.

Carl Lamprecht's teaching that the individual is *absolutely* dependent upon society is too one-sided.

It is the masses' necessity that has brought anesthesia to pass, and the idea of such a measure goes back to antiquity. A genius of the Banting order (insulin) is under special social compulsion, and it is society that rewards him with fame.

Hemmeter quotes Dr. Katharine J. Gallagher to the following effect: "One school . . . emphasizes the *conditions* of *preparation*, and states that these are the causes of historical acts. Another school . . . emphasizes *the idea* as *the cause* of human activity. The truth includes both of these interpretations which must be taken together and not separately."

"Mind begets mind" (Harvey). Thought is progressive. Ideas fertilize the genius to spawn still other ideas. Intuition, whereby Goethe saw in a flash that the bones of the skull are only extended and expanded vertebrae, is the birth of a new idea in a mind already much sensitized and naturally attuned and inured to deductive thinking. If the social environment be especially propitious, great results are sure to follow.

"Among the Greeks," says Dr. Charles Phillips Emerson, "in the fifth century before Christ, modern medicine had its birth. The marvelous flowering of Greek genius in art, literature, philosophy, medicine, during that brief period cannot be ascribed to racial excellence, since the Greeks were never a race, but such a mixture of races that they have been called 'the superb mongrels of history.' If such a description is just to the inhabitants of Greece proper, it is especially accurate for the fathers of medicine, every one of whom was a product

of a Grecian colony of Asia Minor or Northern Africa. Ask for an explanation of the glory that was Greece, and the right answer is that there was operative for a while in Greek society a strong incentive to search out in life that which was true and beautiful. The Greek people made this worth while for their artists and thinkers; that is, a market for excellence existed. If this is true, the genius of Greece was the product not so much of chromosomes, but of culture."

Hemmeter reminds us that all circumstances show that towards the end of the sixteenth century intellectual Europe was ripe for the acceptance of the discovery of the circulation of the blood. "If it had come a few centuries sooner, it would have died at its birth. Think of the many minds and the many ideas dealing with this subject before Harvey: Cesalpinus, Servetus, Sylvius, Fabricius, Colombo, Valverde, Aranzi, Ruini.

What is more obvious than that society now expects and demands something better than surgery for cancer, and who can doubt that the genius who will comply with the requirements is already amongst us?

These considerations account for the differing presentations of medical history. One author will head his chapters in some such manner as this:

Antisepsis.
Circulation of the Blood.
Percussion of the Chest.
Auscultation and the Stethoscope.
Vaccination against Smallpox.
Anesthesia.
Puerperal Fever

and will deal with forces and ideas rather than overstressed personalities.

Another author (e.g., Victor Robinson, in his brilliant *Pathfinders*) will give us chapter headings like these.:

Hippocrates, Father of Medicine.
Galen and Graeco-Roman Medicine.
Paracelsus, Iconoclast of Medicine.
Servetus, Medical Martyr.
Vesalius, Pioneer Anatomist.
Paré, Father of French Surgery.
Hunter and Eighteenth Century Physiology and Surgery.
Jenner and Vaccination.
Laennec and Auscultation.
Simpson and Mortons Anesthesia.
Semmelweis and Holmes: Childbed Fever.
Schleiden and Schwann: The Cell.
Harvey and the Circulation of the Blood.

We must seek to preserve a rational perspective as to the respective rôles of men and of ideas.

Skin Eruptions With Phenobarbital (Luminal)

The three cases reported by William C. Menninger, Topeka, Kan. (*Journal A. M. A.*, July 7, 1928), are the only cases in which the skin rash appeared in approximately 400 cases in which phenobarbital has been used. From the data at hand, no relationship can be drawn between the amount of the drug and the weight of the patient. Phenobarbital may produce an urticarial reaction, or it may produce a scarlatina-like or morbilliform maculopapular erythema. In approximately 50 per cent of the reported cases of the latter condition there has been an associated pyrexia and other systemic toxic symptoms. In the face of the widespread usage of the drug, the number of cases showing such a toxic reaction must represent a very small percentage. A distinction should be made between the toxic reaction and the poison reaction. In the former, many of the cases do not show any particular relation to the dosage of the drug, and skin reactions have appeared frequently on small doses. It seems to Menninger that the cause must be a selective tissue reaction to the drug, dependent on constitutional factors about which we are still ignorant.

Miscellany

William Harvey—1628-1928

Three hundred years ago William Harvey published in Frankfort his "De Motu Cordis," in which he established his theory of the circulation of the blood.

This year the medical profession in particular, and the scientific world in general, will celebrate the Harvey tercentenary.

The tercentenary gives us a fruitful opportunity to recall the spirit and method of a great scientific pioneer, but most important of all, perhaps, it gives us an opportunity to study his opponents, who poured their wrath upon his head or sought to wither him with their silence when he dared to assert that the blood circulates.

I suggest that every Harvey celebration this year should include a discussion of Harvey's opponents—a crowded gallery of distinguished scholars who ran to cover under the traditions of Galen and Hippocrates, and stuck out their tongues at the man who said, "I profess both to learn and to teach anatomy, not from books but from dissections, not from the positions of philosophers but from the fabric of nature."

Professional conservatism has resisted all of the major innovations that have made modern science.

All of the pioneers of medical progress have had to fight either the stubborn indifference or the insolent opposition of their colleagues.

At least twenty of the distinguished anatomists of the time wrote against Harvey's theory of the circulation of the blood, and for the most part they hurled against him, not the results of their own experiments or observations, but simply the words and authority of Galen.

Professional vested interests, then as now, played a great part in the opposition.

"As Dean of the College of Paris," Harvey wrote of John Riolanus, who opposed him, "he was bound to see the physic of Galen kept in good repair, and to admit no novelty into the school without the most careful winnowing, lest, as he says, the precepts and dogmata of physic should be disturbed, and the pathology which has for many years obtained the sanction of the learned in assigning the causes of disease, be overthrown."

After Harvey published his book on the circulation of the blood, his practice declined markedly, the public thought him crack-brained and the medical profession was pretty solidly against him.

But, after all, the things that make doctors resist medical innovations are the things that make all of us resist innovations in social as well as scientific fields.

This is why I suggest that we make the Harvey tercentenary not only a commemoration of Harvey but a clinic in conservatism as well.—GLENN FRANK in the *Evening World*.

Diet Again

From an article by Clarence W. Lieb, A.M., M.D., on "Our Changing Ideas About Diet" in the June *Woman's Home Companion*, one gathers that it is not wise to follow any general theory about diet. Even spinach, he tells us, is not good for everybody. To people who dislike the stuff, that will be good news, for they can easily persuade themselves that they are among those who should avoid it. Dr. Lieb tells of some other old beliefs about food that are now held to be fallacies, and his article will undoubtedly help to counteract some of the nonsense taught by food faddists. Hayden Carruth, commenting in "The Postscript" department of the same

magazine upon this article, suggests a way to be happy in spite of the doctors.

> We'll tell you the secret of getting on with doctors. If you are not feeling well, consult three or four of them. Each will give you different advice as to exercise, eating and so forth, and you can make your own selection and have a pretty good time, and still be strictly following doctor's orders. For example, suppose you have two doctors; one says walk two miles before breakfast and avoid mince pie. The other says, go slow on exercise and eat plenty of hotdog. So you can sit about and never budge, and eat mince pie, or you can trot around the block in the morning and have hotdog for dinner. With three doctors and more advice from each you can really have a much better time than if nothing ailed you.

This plan has its points, but we doubt whether Dr. Lieb would give it his unqualified endorsement. Besides, there are the doctors' bills to be considered. Who would care to receive them in bunches of three or four?—*New York Times Book Review*, May 27, 1928.

The Physician's Library

Growing Up: The Story of How We Become Alive, Are Born And Grow Up. By Karl de Schweinitz. New York: The Macmillan Company; pp. 111; 1928.

The charm and honesty of this little sex primer for children from six to twelve will insure a cordial reception from the profession and discriminating parents, not to speak of those to whom it is addressed, the children themselves who shall be privileged to read it, or have it read to them. It will serve as a guard against, or divest the child mind of, the dark cobwebs spun by distorted sex concepts. It clarifies with admirable simplicity the murky mystery that the puritans have made of sex and reveals it in its natural and beautiful aspect, without equivocations and evasions.

The Glands Regulating Personality. Louis Berman, M. D. Second Edition; pp. 341. 1928. The Macmillan Co., New York.

The fact that a second edition is in evidence shows that there is a public which is anxious to consume certain notions about glands. We are told that the adrenals are the glands of combat and that the mammary gland contains a hormone "with an action like that of placenta, but not so strong, which tends to inhibit the ovary." The placenta is spoken of as an organ and gland of internal secretion. The author states that the placental secretion plays a most important rôle as a brake upon the post-pituitary. "Such an affliction as flatfoot, dependent upon a laxity of the ligaments in one who seems perfectly healthy and strong, may lead the analyst back to a thymus-centered personality." Oscar Wilde is shown to have all the earmarks of the thymus pattern. Nietzsche is placed in the pituitary-centered category.—*M. W. Thewlis.*

Gonococcal Urethritis in the Male. By P. S. Pelouze, M.D. Philadelphia and London: W. B. Saunders Company. 1928. Price $5.

This work is designed for the practitioner and not the specialist and the author also disclaims that it is a textbook or a reference volume on gonorrhea. Of the 357 pages about one fourth are given over to case histories, 48 in number. The text proper consists of 39 sections with 78 illustrations and it should be insisted on that the subject matter, as the title implies, is specific urethritis and its local complications and that general infection is excluded from the start—thus there is no mention of complement-fixation tests. This restriction of the subject-matter impresses us as very much to be commended, but there is no reason to convey the impression that the book is not thorough or exhaustive within the limits of specific urethritis. Hence the preface may somewhat mislead the reader, for correctly conceived the book is of monographic scope. The text abounds with innovations, as in connection with heat treatment, the author claiming that the gonococcus is far more resistant to heat than is commonly taught. There is, however, a corresponding silence on the role of secondary infections, for we recall the time when the prominence of staphylococci in old discharges gave rise to the belief, in some quarters, that the rôle of the gonococcus in the causation of gonorrhea had been over-emphasized. On the whole, however, we have nothing but commendation for the volume, for it is based on abundant clinical observation, disregards the stupidities of tradition and convention, and hence is not only abreast of but ahead of the times.

Hay Fever & Asthma: Their Cause, Prevention, and Treatment. By Ray M. Balyeat, M.A., M.D., F.A.C.P., Instructor in Medicine and Lecturer on Allergic Diseases in the University of Oklahoma Medical School, etc. Second Edition, revised and enlarged. Contains 76 engravings. Pp. 310 including index. F. A. Davis Co., Philadelphia, Publishers, 1928. Price $3.50 net.

As in the treatment of diabetes so also in the treatment of hay fever and asthma the cooperation of the patient is of great importance. For intelligent cooperation the more the patient knows of his condition the better he will be able to cooperate. There have been many books and pamphlets written for the instruction of the diabetic. In the same way this book is of value in the instruction of patients suffering from hay fever and asthma.

An idea of the prevalence of these conditions is obtained from the statement of the author that about seven per cent of the population of the U. S. are sufferers from hay fever, asthma, or allied conditions. The allied conditions include hives, eczema, migraine and probably some cases of mucous colitis and epilepsy. He also states that about sixty-five per cent of all hay fever people finally become asthmatic. The author's experience is that food is largely the cause of those cases of asthma that begin within the first eighteen months of life. In his study of children he found feathers to be the sole cause in as high as sixteen per cent of the cases and a contributing factor in many others. In regard to heredity as a factor in etiology the author found in a study of 1,000 cases that 54.1 per cent gave a unilateral antecedent history and in 6 per cent a positive bilateral history, that is, on both paternal and maternal sides, of asthma and hay fever. Of 403 people without hay fever or asthma the author found that only 9 per cent of their parents gave a positive history.

It is also of interest that in the United States the pollen of wind-borne pollinated plants is the cause of more than 75 per cent of hay fever.

This book is of particular value to patients but is sufficiently detailed, especially in regard to wind-borne pollinated plant life in various sections of the United States, to be of interest to the physician.

Local Anesthesia. By Geza de Takats, M.D., Asst. Prof. of Surgery, Northwestern University School of Medicine, Chicago, Ill., with an introduction by Allen B. Kavanel, M. D., Prof. of Surgery, Northwestern University Medical School. Octavo of 221 pages with 117 illustrations. Cloth, $4.00. Philadelphia and London: W. B. Saunders Company, 1928.

This book has been prepared by the author from lectures on this subject given to undergraduate and post-graduate students at Northwestern Medical School and in the First Surgical Clinic of the University of Budapest.

The author first gives a short history of local anesthesia; the indications and contraindications for its use, also its advantages and disadvantages and the preparation of solutions are then fully discussed.

Each section of the body is discussed systematically under three headings: (1) Nerve Supply, (2) Method of Anesthesia, and (3) Typical Operations. The untoward effects, contraindications and failures are also mentioned.

The book is concise and well illustrated, authoritive, and practical, for the use of both students and surgeons.

Urinary Analysis and Diagnosis by Microscopical and Chemical Examination. By Louis Heitzmann, M.D. Fifth ed. New York: William Wood and Company. 1928. Price $5.

In his preface the author states that no extensive changes have been found necessary in the present edition. Certain new tests have been added without any pretense to completeness. As heretofore the author insists that for purposes of diagnosis the microscopic examination is supreme, in contrast with the findings of both clinical and chemical exploration; and he deplores the fact that most of his colleagues refuse to concede that the function of the analyst must include diagnosis. It is of particular interest to note that the elder Heitzmann made the same claims over 50 years ago when he first opened his pathological laboratory in New York and that the son should still complain of the same indifference today. The original teachings of the father that the urinary epithelium always pointed to the site of the disease seem to have been toned down by the son, although the latter insists that in the majority of cases this identification will hold good. The same is true of the ability of the microscopist to state whether the disease of the urinary tract is acute or chronic—he should be able to make the distinction in a majority of cases. Doubtless there are not a few practitioners living who can recall the uncanny skill of the elder Heitzmann in diagnosis—in modern speech he had "hunches" which were usually correct; but it is also true that this sort of success is not adapted to textbook instruction. While a work in its fifth edition should be immune from ordinary criticism it may be true that diagnostic inferences from actual findings can hardly be included in routine instruction and should be grouped properly under "esoteric" teaching.

Asthma: Its diagnosis and treatment. By William S. Thomas, M. D., Associate Attending Physician in Immunology, St. Luke's Hospital, New York. Pp. 279 including index, with twenty illustrations in black and six in colors; Paul B. Hoeber, Inc., New York. 1928.

A great deal has been learned as to the etiology and treatment of asthma in recent years and a large amount has been written as evidenced by the 325 references listed in this book.

The author calls attention to the fact that the term "asthma" for the sake of accuracy should be applied to one condition only, namely, that associated with bronchospasm, and the term "bronchial", being superfluous, should be dropped. Dyspnea due to cardiac or renal insufficiency or due to secretions in the bronchial passages or caused by tumors pressing upon these structures is not asthma. He also states that asthma is no longer looked upon as a disease but as a symptom complex or syndrome, related, in a manner that is only partially understood, to anaphylaxis, hypersensitiveness and immunological processes.

In the palliative treatment of asthma the author believes that ephedrin is perhaps the most valuable drug at present available and that it is at its best when used as a preventive of attacks. He says patients who suffer regular paroxysms may remain asthma-free and suffer no harm if they receive the proper dose, which may be taken by the mouth.

There is a discussion of protein and autogenous vaccine skin tests, air-borne proteins, food proteins and pollens that may cause asthma. In bacterial asthma the author prefers the use of autogenous vaccines but recommends stock vaccines for those who are unable to obtain the services of a thoroughly competent bacteriological laboratory, the vaccine treatment being preceded by proper surgical treatment of infective foci.

The author concludes that most of his failures to effect radical relief have been where infected paranasal sinuses existed that were not amenable to relief. In other cases the results of treatment of asthma have generally been good.

Folklore of the Teeth. By Leo Kanner, M.D. New York: The Macmillan Co. 1928. Price $4.

For the past four years at least the author has been an industrious contributor to the Dental Cosmos and other dental periodicals on various aspects of the folklore of the teeth, but the book is far more than a collection of reprints for it contains 33 sections while the journal articles quoted in the bibliography number but 19. The contents of the volume are grouped as follows: Number, Shape and Eruption (the folklore thereof); Popular Dental Hygiene; Toothache and Its Cure; Artificial Deformation; Uses of Teeth Outside of the Oral Cavity and Miscellaneous. There are 17 illustrations, a bibliography of 14 printed pages and a glossary of unfamiliar terms, etc., but no analytical index. The omission is pardonable for in this class of work a complete index would have added notably to the size, which has been kept down to a little more than 300 pages. For a volume thus planned and carried out there should be nothing but commendation. The author modestly admits that his effort is a mere entering wedge into a new subject and it must add to his credit that his residence in Yankton, South Dakota, cannot constitute an ideal location for pioneer literary research. Every dentist and stomatologist ought to own a copy of the book and the same obligation should be attached to collectors of works on ethnology, psychology, folklore, mythology, symbolism and the interlocking subjects. Apparently the subject is restricted practically to human teeth, for the Greek myth of sowing the dragon's teeth receives but a line or two of space.

Modern Methods of Treatment. Logan Clendening, M. D. Second Edition; pp. 815. 1928. C. V. Mosby Co., St. Louis.

Clendening has produced a masterpiece in this volume; he not only appeals for a renaissance in therapeutics but like Trousseau and Dieulafoy he writes in such an interesting manner that it is difficult to leave the book when it is once started. Those who are acquainted with the works of George Dieulafoy will recognize this rare art in Clendening.

I had the pleasure of reviewing the first edition and I note in the revised one that Clendening has added descriptions of several newer methods in treatment, including the Minot-Murphy diet in pernicious anemia, scarlet fever antitoxin, parathyroid hormone, ovarian hormone of Allen, Pratt and Doisy, ephedrine sulphate, navasurol, malarial treatment of neuro-syphilis, and many other new items. The chapters on Digitalis, Asthma and Diabetes have been recast. The tenth edition of the pharmacopoeia is used as the basis for revision of drug nomenclature.

There is not a day goes by that I do not refer to Clendening's book and with benefit. At times the index is a little difficult and I believe that the author could well have three indexes: one for drugs, one for diseases and one general. I can thoroughly recommend this volume for the general practitioner and student.—*M. W. Thewlis.*

Nurses, Patients and Pocketbooks. Report of the Economics of Nursing conducted by the committee on the grading of nursing schools. May Ayres Burgeess, Director, pp. 618. New York City. 1928.

This volume is the result of a study, made by the Committee on the grading of Nursing Schools, of the economic factors which most directly affect nursing education. Some of the chapters deal with the growth of nursing, unemployment, what the physicians say, what the patients say, what nurses are like, how nurses like their jobs, what the private duty nurses say, who produce the nurses, what the R. N. superintendents say, facing the economic facts, the free lance nurse, what nurses want, the distribution of nursing service, the hospital and the graduate nurse, nursing the country patient. Much of the text is made from questionnaires.

It gives a complete view of the nursing situation and it will interest many physicians and nurses as well as others.—*E. M. Bowler, R. N.*

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. By Many Contributors (Great Britain); pp. 574. 1928. Wm. Wood and Co., New York.

This is in reality an encyclopedia consisting of a review of the year's work in the treatment of disease. The editors include many of the most eminent English physicians and surgeons. The arrangement of the volume is practical as it is arranged in alphabetical order; besides, a complete general index follows the text. The book is printed on an excellent grade of paper which is necessary for the fine line halftones and colored plates which add so much to the text. The type used is small yet easily read; single spacing is employed which enables the publishers to give in reality an immense amount of material in a single volume. Even in the spacing on the sides, top and bottom, every available inch is utilized in order to give the reader a vast amount of material. Thus a book sells for six dollars which might otherwise sell for double that amount.

Nothing has been spared in making the finest lines in half tones. The colored plates show splendid artistic work.

The book deals with recent advances in medicine and surgery; some subjects are approached by two or more authors in order to gain different angles. This is a valuable point in the study of disease. The so-called Dictionary of Practical Medicine covers from page seven to page 543. It commences with Abdominal Surgery (Miscellaneous) and ends with Yellow Fever. Each title is a resumé of several medical journals and throughout the book much credit is given to American authors. To give the reader an idea about the arrangement of the text I will quote some of the items under V. This includes vaccination, vaginal douching, vascular surgery, Vincent's angina, vitamins, vomiting, (pernicious of pregnancy). Each item is discussed by a well-known author. It would be impossible to go into many details because the ground covered is so extensive. As a reference book it will be used extensively.—*M. W. Thewlis.*

The Ultra-Violet Rays. By Arnold Lorand, M.D. Philadelphia: F. A. Davis Company. 1928. Price $2.50.

The subtitle of this first edition refers to the action of the rays in question on internal and nervous diseases and especially in the conservation of the hair both as to color and amount. The author is well known for his studies of "rejuvenation" through hygiene and natural remedies, and in this connection is recognized as one of the leading protagonists of the wisdom of taking the public into the confidence of the profession. He is as heretofore engaged in practice at Carlsbad. The first section of the book deals with general physics and the use of the invisible rays in obesity, high blood pressure and other general affections. Part II discusses phototherapy in loss of hair and Part III in graying of the same; and of the 258 pages of the book all but about 100 deal with some aspect of cosmetics. The most startling statement in the book is found in the preface, where the author states that as a result of 7 years of exposure to the quartz light in several hundred sittings he has caused a growth of hair to reappear on his own denuded scalp, to say nothing of similar results in many patients. The book is not illustrated, else we might well expect to see reproductions of photographs before and after treatment. The author's second growth is characterized as a "modest" one, which might mean almost anything, and he suggests that had he begun treatment years earlier the result might well have been much better. Considering the magnitude of the effort we may not grudge the author his modest gains. This work will doubtless have a large sale and give rise to much comment but its actual merit is debatable.

High Frequency Practice. By Burton Baker Grover, M.D. Fifth ed. Kansas City: The Electron Press, 1928. Price $6.

This work was published originally in 1922, so that the appearance of a fifth edition, three years after that of the fourth, shows a legitimate demand. In the preface to the present volume the

author states that the alterations are chiefly addenda, although there have also been changes in the terminology with some new concepts and conclusions. Fifteen sketches of technical scope have been added and the former appendix has been replaced by a new one which is made up of questions and answers on the subject of high frequency. This new feature is valued highly by the author, and is extended into the subject of surgical diathermy. The subject of Diathermy in Gynecology has been revised for the author by Dr. Willmoth. The number of pages of the volume is now 632 while the illustrations number 88. Although a review of so popular a work is hardly in place we note that in the analytic index there is no such word as "contraindication". This omission, however, may be the fault of the index maker, for in reading the text we find due reference to individual contraindications.

Diabetes. Its Treatment by Insulin and Diet. By Orlando H. Petty, A.M., M.D., F.A.C.P. Professor of Diseases of Metabolism Graduate School of Medicine University of Pennsylvania, etc. Philadelphia. F. A. Davis Company, 1928. Price $2.00.

This is the fourth edition of Dr. Petty's well known and widely used handbook for the dietetic patient. In a foreword Dr. John B. Deaver registers the gratitude of surgeons for the modern means by which hyperglycemia may be controlled and commends the usefulness of Dr. Petty's simple and direct exposition. The illustrations, tables, sample diets, caloric data and index admirably supplement the general text. Herein the dietetic will find clearly expounded in 155 pages all matters pertaining to his health. It is a great aid to the physician.

A Handbook of Clinical Gynecology and Obstetrics. By Rae Thornton LaVake A.B., M.D., F.A.C.S., Assistant Professor of Obstretics and Gynecology University of Minnesota, etc. Illustrated. St. Louis, The C. V. Mosby Company. 1928. Price $4.00.

This book organizes gynecologic and obstetric knowledge and its practical appreciation in a way which the practitioner will find most fascinating. Its 281 pages (including the index) and 35 illustrations furnish a completely adequate handbook; the book seems to us a remarkable achievement on this score. Part I is mainly gynecologic and Part II mainly obstetric but the subjects blend at appropriate points in each part, and the general result is one of a perfect coordination of themes. This handy-sized work is a triumph of balanced exposition dissipating the daze of facts and details which the encyclopedic textbooks leave in one's mind.

Meningitis and Endocarditis

(Continued from page 222)

lies in the very marked yellow, greenish purulent exudate which covers the greater part of the brain, but particularly the base. The volume of the specimen is within the upper limits of normal. There is no assymetry. The consistency appears somewhat softer than usual. The dura was firmly attached along the right border of the vertex, particularly in the region of the paracentral lobule. On the left side it was free. Otherwise the dura appears normal. The pia arachnoid presents a marked purulent exudate within the meninges. It is thickened at the base, where it tends to obscure most of the underlying structures. It is also quite marked over the inferior frontal, the temporal, occipital lobes and over the cerebellum. Over the vertex there is congestion and staining of the vessels. The convolutions over the vertex show flattening thus indicative of an underlying brain edema. The splenium of the corpus callosum has been separated and a cut made into the right occipital lobe in this region where small punctate hemorrhages are observed. The vessels at the base are for the most part obscured, but are hard, tortuous and markedly sclerotic.

Brain on Section—There is a small area of softening about the size of a pea in the right pons. There are also minute ounctate softenings scattered throughout the right basal ganglia and internal capsule. There is hemorrhages in the right occipital lobe below the forceps major as previously mentioned. The choroid plexus is cystic.

Gross Diagnosis—Meningitis, purulent, type? Arteriosclerosis, severe. Edema, brain, moderately severe. Softening, thrombotic, right basal ganglia. Hemorrhage, cortical, right occipital lobe. Cyst of choroid plexus, bilateral.

Microscopic Examination shows all the evidence of an acute purulent meningitis.

PNEUMOCOCCUS (IV) MENINGITIS

CASE XVII—Daniel B.—Service of Dr. R. G. Torrey, Chief, Medical Board, Philadelphia General Hospital. No. K3798. Admitted 9/18/23, died 9/19/23; Diagnosis: Meningitis, purulent. Adult male, white, aged 66 years, married. Patient admitted to the Surgical Ward with a history of injury to head and tentative diagnosis of fracture of skull.

9/18/23—Patient brought in by ambulance in a comatose condition. Temperature 99; pulse 130; respiration 44. Blood pressure 120/80. Spasticity of left arm and forearm with complete flexion of the latter on the arm. Catheterized and obtained XXVI oz. of dark yellow cloudy urine. Blood sent to chemistry for urea. Spinal fluid was under slightly increased pressure and was opaque yellow (deep) and had a few flakes in it.

The patient has been drinking for past two months at intermittent intervals. Saturday (9/15/23) in the afternoon he became drunk and fell striking his head, bled a great deal and was sent to Polyclinic Hospital where he left on his own volition half hour after admission. Went to bed and felt O.K. on Saturday. Worked all day Sunday, looked O.K. Sunday evening. Worked Monday, was all right when he went to bed only to wake at 1 A. M. this morning complaining of headache (frontal). No bleeding from nose, ears or mouth, had to urinate frequently; was unable to stand and showed signs of getting stiff on left side, was unable to talk. Had convulsions involving upper extremities while in ambulance. Has not been sick for past eleven years, nocturia 2-3 times nightly. Bowels moved twice in bed and passed water about 12 noon today. Bowels moved in bed in dressing room.

Final Surgical Service Note—Patient has been thoroughly studied in Surgical and we do not think this a case of fractured skull. If there is any fracture present (the X-Ray report not received) it is complicated by meningitis. He had a chill and one convulsion while in X-Ray Department. He is comatose, pulse in fair quality and respiration deep and somewhat labored.

Diagnosis—Meningitis, acute, probably *pneumococcic* (as based on laboratory findings.)

9/18/23—Patient transferred from Surgical Department with a diagnosis of meningitis, probably pneumococcic. His meningeal symptoms began this morning as a severe frontal headache followed by a left sided paresis, still later generalized convulsions.

9/18/23—Upon admission he is comatose, breathing shallow and rapid, slight cyanosis, arms flexed across chest and things partially flexed upon abdomen.

Scalp—Lacerated wound over occipital area, sutured. Lipoma over frontal area.

Head—No abnormalities.

Eyes—Right missing-operation P.G.H. (?) Left regular but sluggish.

Face—Reddened.

Nose—No hemorrhage or abnormal findings.

Ears—No hemorrhage or abnormality.

Neck—Muscles rigid, slight opisthotonos upon flexing the head. The thighs flex on the abdomen. (Brudzinski) Jaws fairly stiff.

Mouth—Lips parched, tongue coated brown, very dry, sordes marked.

Throat—Dry, very loud rattle heard.

Chest—Expansion fair, box like, resonant throughout. Moist crackles throughout.

Heart—Normal in size and position, sounds distant, obscured by crackles. B.V.S. generalized arteriosclerosis. Blood pressure 140/62.

Abdomen—Rigid, protective reaction. No organs or masses palpable.

Reflexes—Hyperactive throughout. Gordon + on right; Kernig +; Babinski + on right; Brudzinski on right; contralateral +.

Diagnosis—Meningitis. Lacerated scalp. Pulmonary edema. Arteriosclerosis.

9/18/23—Patient seen by Dr. Doane who states the meningeal involvement is local. He advised anti-meningococcic serum. Twenty cc given intraspinally; ten cc intravenous and ten cc subcutaneously.

Patient seen by Dr. Torrey who states that the primary trouble began in right eye and spread back to the brain. Patient's wife states that the eye was removed some months ago at Pennsylvania Hospital, cause unknown. He was previously in this hospital (no hospital record). Patient was given 7½ cc of pneumococcic antibody; 8 cc 5 per cent boric solution; 1 cc 1 per cent sodium acetate intraspinally; 125 cc pneumococcic antibody subcutaneously.

9/19/23—Patient died at 4:30 this A. M. He was in very poor condition upon admission. His meningeal symptoms seemed to be a local process, secondary to eye.

Diagnosis—Meningitis; Pulmonary edema; arteriosclerosis. Acute diabetic mellitus (cerebral origin). Lacerated scalp.

9/18/23—X-Ray report—plate No. 22133. There is no demonstrable evidence of fracture of the bones of the skull.

Laboratory Record:

Urine—9/18/23—Lt. amber; acid; sugar?; leucocytes—occasional; epithelial cells—few.

Blood—9/18/23—Chemistry—urea 12; sugar 20.

Spinal Fluid—Cells per cmm. 5280; Globulin—heavy trace; Lymphos—1 per cent; Polys—97 per cent; endo. 2 per cent; R.B.C. 1,920 per cm. Smear—many gram + diplococci. Sugar did not reduce benedicts.

Autopsy No. 8050, performed 12 hours after death by Dr. M. McCutcheon.

Clinical Diagnosis—Meningitis.

Bacteriological Diagnosis—Heart blood—pneumococcus group IV.

Gross Anatomical Diagnosis:

Heart—Arteriosclerosis.

Lungs—Congestion and edema, with bronchiolitis.

Kidneys—Arteriosclerosis.

Post-mortem softening of all organs.

Brain—Purulent meningitis over the cerebrum; fibrosis at the base; thickened pia arachnoid and edema.

Histological Diagnosis:

Lungs—Lobular pneumonia (early).

Kidneys—Arteriosclerosis; cloudy swelling.

Spleen—Chr. passive congestion.

Liver—Fatty degeneration.

Brain—Suppurative meningitis.

Cause of Death—Acute suppurative meningitis following injury. Probably due to pneumococcus group IV.

Internal Examination:

Right lung is bound down by adhesions at the apex; no pleural fluid. Pericardium is normal.

Aorta—Shows only slight sclerosis.

Heart—Weighs 385 gms. Of normal consistency. Shows no changes in the myocardium. One of the aortic cusps is stiffened at the base. Presents small calcified nodules in the sinus of the val-salva. Coronary artery is moderately stiffened. Left ventricle measures 16 mm., right, 4 mm. Aortic valve measures 7½ cm., mitral, 10; tricuspid, 12; pulmonic, 7.

Lungs—Left weighs 740 gms. Left lower lobe is red, very moist and does not collapse properly. Pus is expressed from the bronchioles, but no definite areas of consolidation are found. Lower lobe, right lung, resembles that of its fellow. Right upper lobe is exceedingly fibrosed and is torn on removal from the body.

Abdomen—Is free from adhesions and fluid. Organs in normal position.

Spleen—Weighs 60 gms. Is much softened. On section it is pale with indistinct markings.

Stomach and Intestines—Negative.

Liver—Weighs 1720 gms. Flaccid; lower edge not rounded; capsule is transparent. Cut surface has normal color. Markings are somewhat less distinct than usual. Gall bladder normal.

Adrenals—Show post-mortem changes.

Kidneys—Left weighs 155 gms., right 140 gms. Have a normal consistency. Capsule strips readily, leaving a scarred surface. On section cortex and medulla have a normal color and markings. Width of cortex is 5 mm.

Head—Skull saws with decreased resistance; fracture is found in the left parietal region, extending anteriorly to the sigmoid sinuses. External abrasions found over occipital region.

Description by Dr. Richardson:

The brain is normal in size and form. The pia arachnoid is thickened and milky over the whole convexity of the brain. Underneath the arachnoid as it spreads over the frontal lobes it is noted a thick yellow jelly-like mass, most marked at the extreme frontal positions and more so on the left side. This exudate extends backward as far as the Rolando fissure, then shades off. In the frontal position it is so thick as to obscure the convolutions.

In the interpeduncular space, the structures are very definitely bound down and obscured by a fibrous exudate.

The vessels at the base are of normal size. No atheroma or arteriosclerosis is present to excess.

Over the left temporal and lower parietal lobes there is a well marked but not severe edema. On the under surface of the occipital lobes and over the superior surfaces of the cerebellar hemispheres blood is adherent. This is taken to be due to post-mortem causes.

Diagnosis—Purulent meningitis, over cerebrum. Fibrinous at base. Thickened pia arachnoid. Edema.

Examination after hardening by Dr. Winkleman:

Brain is well hardened and the shape preserved. The exudate in the meninges is well marked, more intense over the convexity than at the base and more anteriorly than posteriorly. There is moderate arteriosclerosis. On section the ventricles are moderately dilated with a definite roughing of the lining in the form of little pitting.

Diagnosis—Meningitis-pyogenic.

Microscopic Examination by Dr. Stack:

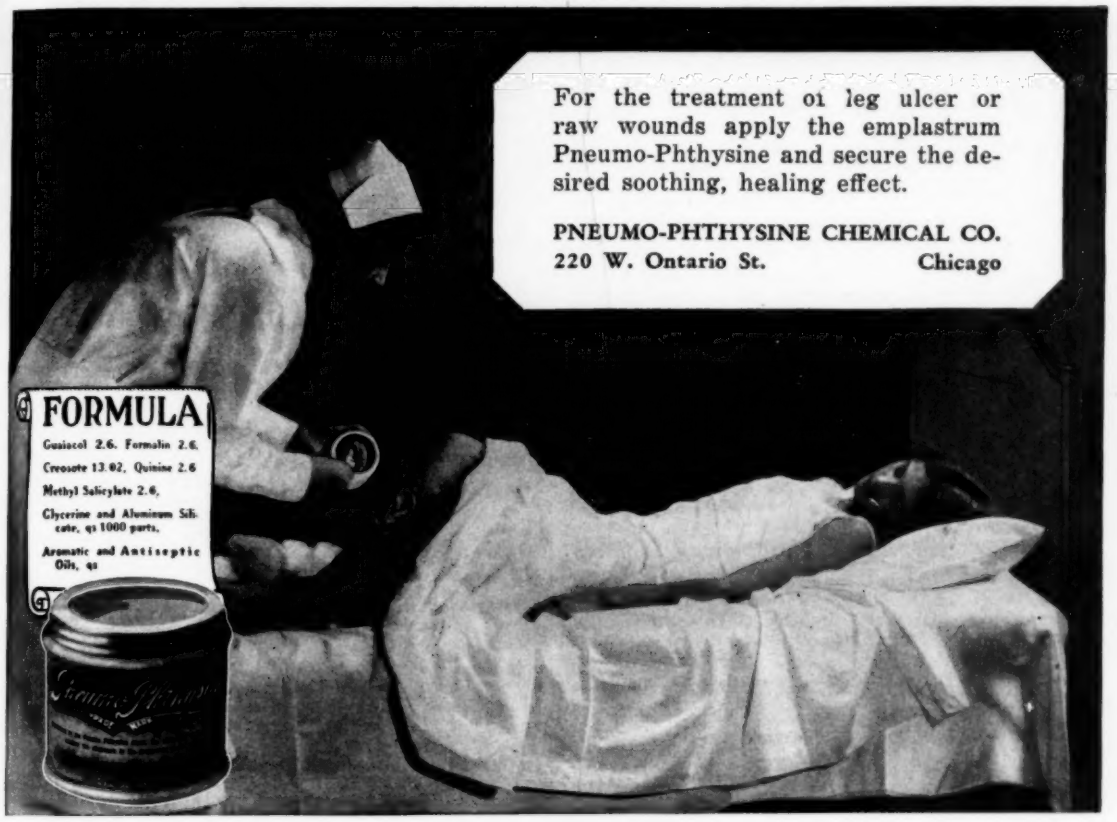
The pia arachnoid of the brain and brain stem is thickened and intensely infiltrated with polymorphonuclears leucocytes and endothelial cells. A few lymphocytes are seen. The blood vessel walls of the brain tissue are slightly thickened. The ganglion cells are normal except for occasional neuronophagy.

Diagnosis—Suppurative meningitis.

(Concluded in September issue)

Rheumatic Heart Disease

Rheumatic heart disease occurs almost exclusively in the first half of life and has its beginning in the first ten years of life, says Hugh McCulloch, St. Louis (*Journal A. M. R.*, June 30, 1928). By the time growth and adolescence are complete, the disease has run its course. Most of its sufferers have succumbed, a few have recovered and in the remainder the condition has been arrested and the patients live the rest of their lives more or less incapacitated. The incidence of first attacks of rheumatic fever and the onset of carditis rapidly diminishes after the first decade of life.


For the treatment of leg ulcer or raw wounds apply the emplastrum Pneumo-Phthysine and secure the desired soothing, healing effect.
PNEUMO-PHTHYSINE CHEMICAL CO.
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FORMULA
Guaiacol 2.6. Formalin 2.6.
Creosote 13.02, Quinine 2.6
Methyl Salicylate 2.6,
Glycerine and Aluminum Silicate, qs 1000 parts,
Aromatic and Antiseptic Oils, qs

Summer Diarrhea

The following formula is submitted as a means of preparing suitable nourishment in intestinal disturbances of infants usually referred to as summer diarrhea:

Mellin's Food	**4 level tablespoonfuls**
Water (boiled, then cooled)	**16 fluidounces**

This mixture contains proteins, carbohydrates and mineral salts in a form readily digestible and available for immediate assimilation.

The need for protein is well understood as is also the value of mineral salts, which play such an important part in all metabolic processes. Carbohydrates are a real necessity, for life cannot be long sustained on a carbohydrate-free diet. It should also be stated that the predominating carbohydrate in the above food mixture is maltose—which is particularly suitable in conditions where rapid assimilation is an outstanding factor.

Above all is the satisfactory result from the use of this suggested nourishment, which is well supported by clinical evidence.

Mellin's Food Company, 177 State Street, Boston, Mass.

Increased Use of Nujol for External Purposes

Where once hospitals used only olive oil, cottonseed oil, or the cheapest mineral oil they could buy for external use on babies, the tendency now is to use the finest grade of mineral oil for all external as well as internal purposes.

In many maternity and baby hospitals they are using Nujol on a baby from the time it is born. Instead of the old olive oil cleansing, the baby is thoroughly oiled with Nujol at birth. All premature babies, too, are cleansed with Nujol until they become normal size and can be bathed regularly. Even then, the daily bath is followed by an oil rub with Nujol to prevent chapping.

This same mineral oil has proved to be a very efficient treatment for skin rashes, scalp diseases, etc. It helps relieve irritation, itching and dryness, and has a soothing, healing effect.

In fact, Nujol is coming more and more into general use as an external rub for babies. Pediatricians are recommending it to young mothers in place of the usual talcum powder. They advise using it after every bath after exposure to wind and cold, and on any other occasions when there is danger of chapping or chafing. It is far better than powder, which is so drying.

There are certain skin conditions, in fact, which powder not only does not help, but actually aggravates. When a baby's buttocks are red and sore, powder should not be used. Instead the sore area, especially down in the creases and folds, should be carefully wiped with a pure mineral oil like Nujol.

Every doctor is of course familiar with the internal uses of Nujol for babies—as a regular dose, and as a retention enema.

Nujol cannot upset the most delicate baby's stomach, as it contains absolutely no impurities. It has been purified and refined to the highest degree possible.

Many doctors advise their patients to buy the hospital size can of Nujol for home use. It is far more economical in the long run where a great deal is used for external purposes.

Nujol, by the way, is an excellent massage medium for adults as well as children.

The Ætiology of Alcoholism

In spite of a steadily decreasing consumption of alcohol in this country, of which there is further evidence in the figures for last year just published by the United Kingdom Alliance. it is arguable that from the national standpoint the drink problem is more serious to-day than it was 15 years ago. A country which is working on a reduced margin of industrial strength can less easily afford the inefficiency for which alcoholism is partly responsible. It may be admitted that love of sport and the open air, together with easier relations between the sexes, exerts an influence against intemperate drinking, and that "ordinary people" in this country are becoming less and less tolerant of drunkenness. But there remains a large class of people whose alcoholism calls for treatment, and it is important that the causes of their failing should receive the most careful study. The problem is one primarily for psychologists and was discussed at a meeting of the Section of Psychiatry of the Royal Society of Medicine and the Medical Section of the British Psychological Society, reported on P. 704 of *The Lancet* last week.

As Dr. Bernard Hart remarked in his opening paper, the question why men take alcohol to excess is really identical with the question why they take it at all, and to this various answers have been given. One of the most obviously acceptable is that put forward by Dr. Crichton Miller, who said that alcohol was taken to modify the feeling-tone, whether this resulted from bodily or emotional experience. The two groups into which Kretschmer divides chronic drinkers are fairly well recognised by laymen as well as doctors: the type which drinks for social reasons and the type which drinks to get drunk; the pyknic cyclothymic jovial type and the schizoid, difficult and nervous type to whom alcohol is a drug. Naturally, these two groups have no hard-and-fast line between them, and many persons undoubtably gravitate from the first to the second, but from a psychological point of view the distinction may be important. Granted that men take alcohol to ease the pressure of life on their minds and bodies, the question arises why they sometimes fall into alcoholism. Dr. J. A. Hadfield suggested that alcoholics were persons who found the responsibilities of life too much for them and used alcohol as a means of evasion. This is probably true for most drunkards, but not everyone would agree that all of them are emotionally immature in exactly the way he suggested—that they had never felt the confidence and sense of protection that every child ought to feel, and that they suffer from a chronic fear of life from which they seek to escape. Support may, however, be found for Dr. Hadfield's view in a recent and helpful survey of the field by Dr. Ernest Snowden, who cites the case of a man whose mother had brought up her family to avoid showing affection. This unsound psychological training led to mental conflict when he married, and he used alcohol as a means of removing the inhibitions which prevented him from feeling marital effection. A realization of the part which this kind of conflict may play in driving persons of a certain type to drink will help towards an understanding of the apparent obscurities of the psycho-analytical point of view. This was expounded by Dr. E. Glover, who dealt with the second or schizopherenic type of Kretschmer very thoroughly from the Freudian reductive standpoint. The Freudian sees in the confirmed drunkard a person who is attempting to extricate himself from an impasse. He takes flight from environmental reality into phantasy liberated by the dulling of the higher centres. This phantasy corresponds to definite layers of psychical development, which in the normal person are buried deep or assimilated into his adult personality, but which come into their own when the primitive impulses are released and dictate conduct appropriate to various stages of childhood. The interest of the Freudian view is its insistence on internal, instinctual frustrations as the real cause of alcoholism, and its relegation of social, habitual, and economic factors to the position of accessories after the fact. The man is supposed to find in dring a substitute for enjoyment experienced through the mouth, "oral erotism," the libido satisfaction of a baby at the breast. He has regressed to this stage of sexual development, with the result that his emotional consciousness is flooded with "castration anxiety," the protest of an inner insufficiency or impotence, or of a thwarted instinct towards self-expression. According to the psycho-analysts it is to drown castration anxiety, to short-circuit sex, that people drink to excess. Something like this may be true of the second class of drunkards; whether it is true of the first is more doubtful. It is not impertinent to suggest that the analyst must see very many more of the schizophrenic class in his consulting-room than he does of the sociable class, whose excesses exact more material penalties and who are less accessible to analysis when their breakdown is mental. As Dr. Hart pointed out, a number of working men take drink simply from a craving induced by habit, with no urge towards a refuge from reality other than the need to relax after a hard day, whilst some investigators maintain that a normal man may become an alcoholic quite fortuitously. On the other hand, Dr. W. H. Stoddart cited cases in which the need for alcohol was felt imperatively before alcohol had ever been taken. Dr. Chrichton Miller gives low blood pressure as a frequent predisponent towards drunkenness, a condition by no means peculiar to the repressive or schizophrenic temperament.

The chief application of ætiological knowledge lies in prophylaxis. Dr. E. Mapother was optimistic enough to hope, in the light of the great reaction against social drinking through which this country has been passing for several decades, that alcoholism in a hundred years' time would be chiefly of intereste to historians. Nothing in the discussion supported the view that alcohol itself is worthy of abolition. The consummation most Englishmen desire is that the nation should be educated in its wise use, and towards this the most important contribution is likely to be made by those responsible for education, including those who specialise in the psychological training of children, and those who, like Dr. Snowden, approach the subject from the psychological angle. If the child is enabled to face life courageously, the adult will not seek escape from it in alcoholism, or any other neurosis.—*Lancet*, Apr. 14, 1928.

Bedtime Nourishment

It is a well-known fact that the administration of suitable nourishment just before retiring is very effectual in inducing natural, restful sleep and this applies particularly in the treatment of insomnia and many extremely nervous conditions.

A food-drink that is palatable, easily digested, rapidly assimilated and particularly appropriate for nourishment at the hour of retiring may be quickly prepared from any of the following formulas:

Mellin's Food	4 level tablespoonfuls
Water	½ coffee cup
Milk	½ coffee cup

Place the directed quantity of Mellin's Food in the cup; then add the milk and water previously heated to the boiling point. Drink slowly while hot.

Mellin's Food	4 level tablespoonfuls
Water	⅞ coffee cup
Cream	⅛ coffee cup

Place the directed quantity of Mellin's Food in the cup: add the water previously heated to the boiling point and then add the cream. Drink slowly while hot.

Clinical Diagnosis of Food Poisoning

"A clinical diagnosis of food poisoning, especially when it is suspected that the food is contaminated with certain bacteria or their toxins, should be supported by epidemiologic, bacteriologic and toxicologic investigation." Modern health departments should require this investigation, especially in the light of the evidence as to autopsies in deaths wrongly diagnosed as due to "ptomaine poisoning."—*Jour. A. M. A.*, June 30, 1928.